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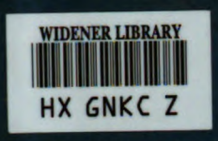

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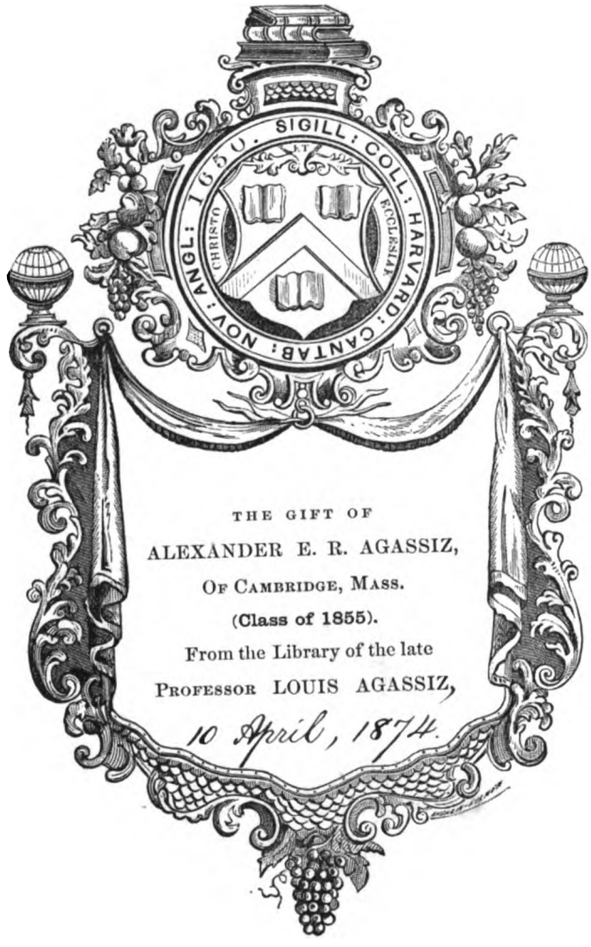

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RESULTS

OF

Five Years' Meteorological Observations

FOR

HOBART TOWN;

WITH WHICH ARE INCORPORATED THE RESULTS OF

TWENTY-FIVE YEARS' OBSERVATIONS

PREVIOUSLY PUBLISHED BY THE ROYAL SOCIETY OF TASMANIA,

AND

COMPLETING A PERIOD OF THIRTY YEARS.

COMPILED FOR THE PAPERS AND PROCEEDINGS OF THE ROYAL SOCIETY OF TASMANIA FROM OBSERVATIONS GRATUITOUSLY MADE AT THE PRIVATE OBSERVATORY

BY

FRANCIS ABBOTT, F.R.A.S., F.R.M.S.

Tasmania:
JAMES BARNARD, GOVERNMENT PRINTER, HOBART TOWN.

1872.

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INTRODUCTION.

THE "Results of Twenty-five Years' Meteorological Observations," already published, terminated in 1865. Further observations for the next five years having been tabulated, it has been thought desirable to incorporate these with the former, in order to give in a complete form the results of the Observations of Thirty consecutive Years—1841 to 1870.

In compiling these Abstracts great care has been taken to ensure accuracy. The sums of the various columns in the twenty-five years' tables have been taken as starting points; to these have been added the sums of the corresponding columns in the returns for the subsequent five years, and from the totals thus obtained the thirty years' means have been taken.

Several slight errors which occur in the twenty-five years' tables have been corrected during the compilation of the present abstracts; and it is thought that, although very liable to escape notice among such a multiplicity of figures, inaccuracies (if any) will be found but few in number and of little importance.

As the following statement will shew, the results of the thirty years' observations agree very closely with those of the twenty-five years previously published—the difference in many cases amounting to only a second or third place of decimals. This will tend to prove that the observations have been correctly made and carefully recorded :—

Barometer, mean for 30 years	29·850,	being + ·043 in excess of 25 years' mean.
Temperature, ditto	54·72,	ditto + ·27 ditto.
Diurnal range of temperature, ditto	17·91,	ditto + ·05 ditto.
Solar intensity, mean for 15 years	93·39,	ditto + ·40 in excess of 10 years' mean.
Terrestrial radiation, ditto	43·01,	ditto + ·15 ditto.
Dew point, mean position for 30 years	45·49,	ditto + ·04 in excess of 25 years' mean.
Humidity of air, mean for 30 years	75 pr.ct.	ditto the same as for 25 years.
Elastic force of vapour, ditto	·316,	ditto + ·001 in excess of 25 years' mean.
Rainfall, ditto	22·71 in.	ditto + ·06 ditto.
Number of days on which rain fell, mean for 16 yrs.	139·88,	ditto —5·39 below 11 years' mean.
Ozone, mean for 14 years	7·24,	ditto + ·06 above 9 years' mean.
Prevailing direction of wind	N.W. & S.E.,	is the same as in the 25 years' tables.
Wind force, mean for 14 years 58·37 lbs, is — 4·63 lbs. below the 9 years' mean in the 25 years' tables.		

During the years 1866, 1867, 1868, 1869, and 1870 the Meteorological Observations were, as previously, under my own charge; the general management of all the operations connected with the department being carried on by me at the private observatory.

Dr. E. Swarbreck Hall undertook, as heretofore, the checking, summing, analysing, &c. of the Monthly Registers; and Mr. T. Roblin, the Curator of the Museum, has carefully executed the

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work of tabulating and computing the following Abstract Tables from the Monthly Registers for the above five years, the whole having been subsequently revised by Dr. Hall. The reduction of the observations, with the detailed examination of the diurnal inequalities of the meteorological elements, has been performed, as in former years, by myself.

The instruments in use during the five years were as nearly as possible identically the same as in the preceding twenty-five years; but it is perhaps desirable to repeat the account of them which was given in 1861 with the twenty years' abstract tables:—

1. Barometer by Negretti and Zambra, placed in the register room, with its cistern at an elevation of 2 ft. 6 in. above the floor. The tube of this instrument is 0·528 in. in diameter. The zero of the graduated scale is marked by the apex of an inverted ivory cone, to which the surface of the mercury in the reservoir is adjusted before reading. The vernier will read to ·002 of an inch. The correction for capillarity is +0·002. The sum of the correction for capillarity and index error is —·001 which is neglected.

2. Dry-bulb maximum Thermometer, No. 1508, by Negretti and Zambra.

3. Dry-bulb minimum Thermometer, No. 294, by Casella.

4. Wet-bulb maximum Thermometer, No. 1530, by Negretti and Zambra.

5. Wet-bulb minimum Thermometer, No. 2137, by Casella.

6. Hygrometer, No. 531, by Negretti and Zambra.

7. Solar intensity Thermometer, black-bulb, insulated, No. 1607, by Casella.

These instruments are all placed on one frame 4 ft. 6 in. above the ground, within a pent-house situated on the W.N.W. side of the transit room. The penthouse is so constructed of open work as to allow a perfectly free passage of air, and to afford a good protection to the instruments from storms and rain.

8. Sky-radiating Thermometer, No. 7072, by Casella, placed on the grass in an exposed situation, at a distance of 12 yards south of the equatorial room.

9, 10. Pluviometer and Evaporating Apparatus, by Negretti and Zambra, placed on a platform 3 ft. 6 in. above the ground in the farther part of the garden, at a distance of 12 yards from the altitude and azimuth instrument. The rain is poured into a graduated glass vessel, 2 inches in diameter. No sensible loss by evaporation can take place as the rain is measured every day.

The Evaporating Dish is 5 inches in diameter, with overflow pipe a little below the surface, furnished with wire-work cover. By means of this Evaporating Dish, in connection with the Pluviometer, the exact amount of evaporation is ascertained when both the instruments are exposed to the open sky.

11. Anemometer (Lind's), by Varley, fixed at the W.N.W. of the penthouse. The different currents of the wind are registered by a vane 192 feet above the ground.

12. Electrometers.—Of these various kinds have been tried, some of which have been especially made for recording Atmospheric Electricity brought from a height of fifty-six feet above the surface of the ground. The gold-leaf electrometer having, under certain circumstances, been found the most sensitive, has for the last ten years been in constant use. This department of meteorology is, however, very arbitrary, and up to the present time no inductive or satisfactory conclusion has, to my knowledge, been arrived at explanatory of the office held by electricity with regard to meteorological phenomena.

13. Ozonometer.—In the year 1848 Schonbein discovered the new chemical principle Ozone, into which oxygen may be transformed by means of the electrical machine; and there is little doubt that it is constantly being produced by the electricity which is always present in the atmosphere. It is the most powerful known disinfectant, readily uniting with the gases which arise from decaying animal and vegetable matter, and by depriving them of their noxious properties acts as a great purifier of the air.

The test for ozone, like that for atmospheric electricity, is very arbitrary. It is found necessary in registering the amount of ozone, indicated by the depth of the tint on the paper, to estimate the force of the wind during the time of exposure, as on a windy day more ozone will be collected,

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because more air will have passed over the paper than would have been the case had the weather been calmer. Another insuperable difficulty in the way of accurately observing the real amount of ozone in the atmosphere arises from the uncertainty which exists as to whether the colouring of the paper is altogether due to the action of ozone, or to that of nitrous or other acid vapours in the air.

The influence exercised by meteorological phenomena upon human health, within the Hobart Town Registration District, Dr. Hall will be able to show from his regular and elaborate Health Reports, which are based upon these Monthly Registers.

F. ABBOTT.

Private Observatory,
March, 1872.

MEMO.

The "Solar Intensity mean" is for 15 years only (1856 to 1870).
The "Terrestrial Radiation" ditto, is for the same period.
The "Number of Days on which Rain fell" ditto, is for 16 years (1855 to 1870).
The "Mean daily amount of Ozone" is for 14 years (1857 to 1870).
In the column of Wind Force the monthly *means* for the 9 years of the 25 years' tables have been taken instead of the *sums* as in the other columns.

NOTE.—Copies of the 25 Years' Tables, previously published, will be supplied to such Institutions as may not have previously received them, on application being made to the Honorary Secretary of the Royal Society of Tasmania.

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MONTHLY MEANS of Thirty Years' Meteorological Observations for Hobart Town.

Month.	Barometer.	Thermometer.				Humidity of Air.			Condensation.		Ozone.	Prevailing Direction and Force of Wind.	
	At Temperature 30°.	Mean Temperature.	Mean Diurnal Range.	Mean Solar Intensity.	Mean Terrestrial Radiation.	Dew Point. Mean Position.	Humidity of Air.	Elastic Force of Vapour.	Rain in Inches.	No. of Days on which Rain Fell.	Mean Daily Amount.	Direction.	Force.
	Inches.	°	°	°	°	°	Per cent.	Per 1000.	Inches.		Chromatic scale.		lbs. per square foot.
25 Yrs. Jan. *(sum).*	743·185	1571·12	519·04	1096·49	512·43	1263·83	16·84	9·322	33·92	95	54·95	S.E., N.W.	77·17
1866 „	29·856	62·13	21·90	105·60	51·74	49·00	·66	·372	·12	4	6·84	SE., W., N.W.	75·42
1867 „	29·869	63·02	20·97	103·58	49·40	50·10	·68	·391	1·76	8	7·12	S.E., N.W.	58·77
1868 „	29·918	59·69	17·13	100·68	48 87	49 50	·72	·368	2·54	11	7·94	S.E., N.W.	29·12
1869 „	29·747	62·40	19·61	106·45	48·92	50·80	·67	·374	4·31	13	7·42	S.E., N.W.	37·44
1870 „	29·758	62·62	20·68	107·60	49·08	49·00	·64	·361	4·57	12	5·85	N.W., S.E.	92·63
Sum for 30 years ..	892·333	1880·98	619·33	1620·40	760·44	1512·23	20·21	11·188	47·22	143	90·12	..	370·55
Mean for 30 years..	29·744	62·69	20·64	108·02	50·70	50·41	·67	·373	1·57	8·93	6·93	S.E., N.W.	61·76
25 Yrs. Feb. *(sum).*	745·772	1547·10	493·84	1078·72	495·67	1263·87	17·60	9·349	42·37	85	56·12	S.E.	57·02
1866 „	29·903	65·19	19·50	110·20	54·20	52·30	·66	·405	·55	4	8·05	S.E., N.W.	41·86
1867 „	29·812	62·73	20·39	101·32	49 07	50·80	·67	·377	·53	4	7·55	S.E., N.W.	83·28
1868 „	29·958	62·34	20·17	113·00	50·29	50·08	·70	·391	1·27	6	7·54	S.E., N.W.	40·04
1869 „	29·877	62·52	16·93	103·34	50·32	50·08	·68	·380	·81	9	7·52	N.W., S.E.	45·25
1870 „	29.928	63·45	23·32	107·36	45·46	48·20	·62	·355	·35	5	6·37	N.W., S.E.	60·88
Sum for 30 years ..	895·250	1863·33	594·15	1613·94	745·01	1515·33	20·93	11·257	45·88	113	93 15	..	328·33
Mean for 30 years..	29·842	62·11	19·81	107·60	49·67	50·51	·70	·375	1·53	7·00	7·17	S.E., N.W.	54·72
25 Yrs. March *(sum)*	746·377	1494·10	485·03	1032·86	481·52	1230·53	17·81	8·909	41·63	100	56·08	N.W., S.E.	52·65
1866 „	30·017	60·25	23·00	101·60	48·51	50 80	·72	·371	2·38	11	6·92	W., N.W.	49·43
1867 „	30·012	60·65	23·00	104·60	45·87	48·70	·69	·363	·86	11	7·40	S.E., N.W.	64·79
1868 „	29·881	62·12	23·10	107·79	49·26	49·00	·66	·363	·47	7	7·76	N.W., S.E.	72·61
1869 „	29·916	59·65	20·55	103 16	46·98	47·70	·70	·357	1·58	9	7·42	N.W., S.E.	41·10
1870 „	30·177	60·71	20·42	102·52	46·81	49·80	·68	·360	·94	6	6·87	S.E., N.W.	47·33
Sum for 30 years ..	896·380	1797·48	595·10	1552·53	718·95	1476·53	21·26	10·723	47·86	144	92·45	..	327·91
Mean for 30 years..	29·877	59·92	19·84	103·50	47·93	49·22	·71	·357	1·60	9·00	7·11	N.W., S.E.	54·65
25 Yrs. April. *(sum.)*	747·285	1375·75	430·59	918·09	430·67	1177·66	19·00	8·135	44·51	130	62·99	N:W.	47·85
1866 „	30·017	57·33	19·80	92·55	47·25	47·40	·74	·347	1·02	7	6·98	S.E., N.W.	56·46
1867 „	30·065	57·39	21·03	97·52	42·28	49·30	·76	·355	·78	8	7·30	S.E., N.W.	32·76
1868 „	29.933	55·71	18·37	92·85	42·38	45·20	·71	·314	2·09	9	7·55	N.W., W.	82·77
1869 „	30·019	56·46	17·00	88·93	45·38	46·30	·74	·338	·50	4	7·08	N.W.	40·95
1870 „	30·045	57·21	13·97	86·13	47·57	49·30	·81	·374	4·25	13	7·01	S.E., N.W.	21·32
Sum for 30 years ..	897·364	1659·85	520·76	1376·07	655·48	1415·16	22·76	9·863	53·15	171	98·82	..	281·61
Mean for 30 years..	29·912	55·33	17·36	91·74	43·69	47·17	·76	·329	1·77	10·70	7·06	N.W., S.E.	46·94
25 Yrs. May. *(sum.)*	746·177	1256·91	378·95	818·75	393·12	1087·14	20·04	7·554	45·27	155	61·16	N.W.	40·83
1866 „	29·932	54·20	17·35	86·05	44·06	48·10	·81	·342	1·82	10	6·87	S.W., N.W.	55·69
1867 „	30·155	52·66	14·19	84·45	43·68	48·00	·85	·340	2·03	12	7·06	S.E., N.W.	18·72
1868 „	30·130	53·14	18·16	83·89	39 69	43·00	·74	·300	·44	5	7·05	N.W.	46·30
1869 „	29·983	49·94	13·48	75·37	40·44	46·90	·85	·307	3·07	14	7·65	N.W., S.E.	9·36
1870 „	30·054	51·63	18·45	83 95	38·74	42·80	·74	·291	·59	8	6·08	N.W.	27·05
Sum for 30 years ..	896·431	1518·48	460·58	1232·46	599·73	1315·94	24·03	9·134	53·22	204	95·87	..	197·95
Mean for 30 years..	29·881	50·62	15·35	82·16	39·98	43·86	·80	·304	1·77	12·75	6·85	N.W.	32·99
25 Yrs. June. *(sum.)*	747·025	1167·71	376·10	749·43	366·27	1031·10	20·95	6·723	45·63	128	58·51	N.W.	24·51
1866 „	29·977	48·83	17·10	75·87	36·52	50·80	·77	·266	1·86	12	7·05	W., N.W.	78·84
1867 „	30·032	51·64	17·03	79·43	40·13	44·90	·79	·268	1·53	11	6·83	N.W.	20·80
1868 „	29·943	47·12	14·40	74·70	35·77	40·60	·85	·277	1·01	12	6·42	N.W.	8·06
1869 „	29·956	48·82	14·77	76·95	38·48	41·70	·80	·277	1·55	9	6·96	N.W.	27·57
1870 „	29·789	48·59	13·90	76.02	36·83	41·70	·78	·265	2·32	13	6·77	N.W.	68·18
Sum for 30 years ..	896·722	1412·71	453·30	1132·40	554·00	1250·80	24·94	8·071	53·90	185	92·54	..	227·96
Mean for 30 years..	29·891	47·09	15.11	75·49	36·93	41·69	·83	·269	1·80	11·56	6·61	N.W.	37·99

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MONTHLY MEANS of Thirty Years' Meteorological Observations—continued.

Month.	Barometer.	Thermometer.				Humidity of Air.			Condensation.		Ozone.	Prevailing Direction and Force of Wind.	
	At Temperature 32° F.	Mean Temperature.	Mean Diurnal Range.	Mean Solar Intensity.	Mean Terrestrial Radiation.	Dew Point. Mean Position.	Humidity of Air.	Elastic Force of Vapour.	Rain in Inches	No. of Days on which Rain fell.	Mean Daily Amount.	Direction.	Force.
	Inches.	°	°	°	°	°	Per cent.	Per 1000.	Inches.		Chromatic Scale.		lbs. per square foot.
25 Yrs. July. *(sum.)*	746·101	1143·06	371·42	755·16	355·52	1001·54	20·74	6·428	51·48	151	63·80	N.W.	39·78
1866 „	30·100	45·23	19·16	75·00	33·50	38·50	·83	·255	2·52	15	7·00	S., N.W.	23·67
1867 „	29·788	49·01	15·97	80·37	37·65	40·07	·76	·275	1·33	14	7·43	N.W.	42·39
1868 „	29·985	47·30	16·68	78·21	33·63	40·60	·79	·256	3·76	16	7·78	N.W.	41·61
1869 „	30·032	49·15	17·03	78·11	36·61	40·70	·77	·271	1·20	9	7·10	N.W.	22·62
1870 „	30·008	48·23	14·84	74·34	36·74	39·60	·78	·262	2·61	12	6·31	N.W.	31·74
Sum for 30 years ..	896·014	1381·98	455·10	1141·19	533·65	1201·01	24·67	7·747	62·90	217	99·42	..	201·31
Mean for 30 years..	29·867	46·07	15·17	76·08	35·58	40·03	·82	·258	2·10	13·56	7·10	N.W.	33·64
25 Yrs. Aug. *(sum.)*	745·191	1201·88	394·44	817·84	358·04	1021·00	19·94	6·712	45·86	148	67·68	N.W.	44·97
1866 „	29·952	50·60	18·55	83·70	38·18	41·80	·73	·267	·93	12	7·79	N.W.	42·66
1867 „	29·967	51·43	16·52	85·08	39·89	40·08	·73	·290	1·01	13	8·19	S.E., N.W.	77·29
1868 „	29·906	50·06	21·03	87·27	35·32	41·80	·75	·270	·33	7	8·23	N.W.	17·68
1869 „	29·862	51·09	17·13	82·77	39·15	40·80	·73	·273	2·35	13	7·35	N.W.	65.31
1870 „	29·723	49·17	18·71	85·65	34·98	38·60	·74	·259	1·02	14	6·57	N.W.	39·81
Sum for 30 years ..	894·601	1454·23	486·38	1242·31	545·56	1224·08	23·62	8·071	51·50	207	105·81	..	287·73
Mean for 30 years..	29·820	48·47	16·21	82·82	36·37	40·80	·79	·269	1·72	13·00	7·56	N.W.	47·95
25 Yrs. Sept. *(sum.)*	744·041	1269·11	422·50	885·42	383·89	1054·27	19·09	6·964	51·92	168	71·63	N.W.	72·53
1866 „	29·730	52·23	20·37	90·11	38·10	41·90	·69	·269	1·88	15	8·22	S.W., NW.	80·15
1867 „	29·712	52·53	20·00	85·92	39·00	41·90	·74	·290	5·24	12	8·26	S.E., N.W.	38·50
1868 „	29·864	55·17	20·40	97·57	42·08	45·20	·72	·309	2·71	12	8·58	N.W., S.E.	40·30
1869 „	29·974	52·81	20·23	93·77	39·75	41·90	·69	·271	·98	10	7.25	N.W., S.E.	62·71
1870 „	29·871	52·69	18·20	88·97	39·50	41·90	·72	·284	3·17	12	6·97	N.W., S.E.	63·73
Sum for 30 years ..	893·192	1534·54	521·70	1341·76	582·32	1267·07	22·65	8·387	65·90	229	110·91	..	357·92
Mean for 30 years..	29·773	51·12	17·39	89·45	38·82	42·24	·76	·280	2·20	14·31	7·92	N.W., S.E.	59·65
25 Yrs. Oct. *(sum.)*	744·605	1348·67	466·88	955·99	419·98	1110·03	18·38	7·500	49·20	164	71·26	N.W.	99·39
1866 „	29·746	56·03	20·55	98·30	42·32	46·30	·75	·334	3·34	12	8·10	S.E., W., N.W.	66 59
1867 „	29·484	54·51	17·87	96·94	41·95	42·10	·68	·268	1·90	19	8·37	N.W., W.	106·95
1868 „	29·799	56·81	20·87	101·35	43·23	44·40	·67	·308	1·83	10	8·35	S.W., S.E.	97·80
1869 „	29·766	57·58	17·32	102·47	45·73	47·40	·72	·343	3·32	15	7·56	S.E., N.W.	46·29
1870 „	29·939	57·96	20·39	101·71	42·68	46·60	·68	·328	2·34	14	7·10	N.W., S.E.	80·53
Sum for 30 years ..	893·339	1681·56	563·88	1456·76	635·84	1336·83	21·88	9·081	61·93	234	110·74	..	497·55
Mean for 30 years..	29·778	54·39	18·79	97·12	42·39	44·56	·73	·303	2·06	14·63	7·91	N.W., S.E.	82·93
25 Yrs. Nov. *(sum.)*	753·043	1436·11	477·01	1018·10	464·88	1161·75	17·72	8·132	70·89	140	68·05	N.W., S.E.	112·32
1866 „	29·794	56·46	18·97	101·23	44·58	46·30	·71	·321	3·54	15	7·92	N.W.,S.W.,S.E.	75·68
1867 „	29·687	58·51	19·70	106·28	45·12	44·70	·63	·308	2·14	14	8·07	N.W., W.	200·66
1868 „	29·889	61·73	22·00	110·67	47·47	48·70	·64	·350	·16	5	7·34	S.W., S.E.	75·16
1869 „	29·706	59·51	19·90	102·13	45·63	45·80	·66	·329	1·87	14	6·72	N.W., S.E.	52·01
1870 „	29·816	57·63	17·77	90·26	45·12	47·40	·70	·329	4·82	18	6·93	N.W., S.E.	85·59
Sum for 30 years ..	901·935	1729·95	575·35	1528·67	692·80	1394·65	21·06	9·769	83·42	206	105·03	..	601·42
Mean for 30 years..	30·065	57·67	19·18	101·91	46·19	46·49	·70	·326	2·78	12·88	7·50	N.W., S.E.	100·24
25 Yrs. Dec. *(sum.)*	743·634	1528·14	497·79	1039·74	482·42	1225·50	16·96	8·806	43·26	133	64·76	S.E., N.W.	87·43
1866 „	29 915	60·87	20·16	105·03	49·94	49·30	·69	·368	3·39	10	7·51	S.E., N.W.	80·12
1867 „	29·619	60·20	20·06	106·34	47·05	46·80	·67	·345	3·16	13	8·18	N.W., S.E., W.	119·18
1868 „	29·739	61·55	21·48	107·23	47·74	47·19	·64	·350	1·47	12	7·19	S.E., N.W.	78·83
1869 „	29·659	63·29	20·55	107·61	48·77	50·10	·65	·374	2·33	11	6·42	N.W., S.E.	71·05
1870 „ ..	29·863	61·51	21·65	106·30	45·95	47·90	·63	·341	·55	6	5·45	S.E., N.W.	85·34
Sum for 30 years ..	892·429	1835·56	601·69	1572·25	718·87	1467·29	20·24	10·584	54·36	185	99·51	..	521·95
Mean for 30 years..	29·748	61·19	20·06	104·82	47·92	48·91	·67	·353	1·81	11·56	7·11	N.W., S.E.	86·99

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MEAN RESULTANTS from the Thirty Years' Meteorological Tables for Hobart Town, from 1841 *to* 1870, *inclusive.*

Months.	Barometer.	Thermometer.				Humidity of Air.			Condensation.		Ozone.	Prevailing Direction and Force of Wind.	
	At Temperature 32°.	Mean Temperature.	Mean Diurnal Range.	Mean Solar Intensity.	Mean Terrestrial Radiation.	Dew Point. Mean Position.	Humidity of Air.	Elastic force of Vapour.	Rain in Inches.	No. of Days on which Rain fell.	Mean Daily Amount.	Direction.	Force.
	Inches.	•	•	•	•	•	per cent.	per 1000.	Inches.		Chromatic scale.		lbs. per square ft.
January	29·744	62·69	20·64	108·02	50·70	50·41	·67	·373	1·57	8·93	6·93	S.E., N.W.	61·76
February	29·842	62·11	19·81	107·60	49·67	50·51	·70	·375	1·53	7·00	7·17	S.E., N.W.	54·72
March	29 877	59·92	19·84	103 50	47 93	49·22	·71	·357	1·60	9·00	7·11	N.W., S.E.	54·65
April	29·912	55·33	17·36	91·74	43·69	47·17	·76	·329	1·77	10·70	7·06	N.W., S.E.	46·94
May	29·881	50·62	15·35	82·16	39·98	43·86	·80	·304	1·77	12·75	6·85	N.W.	32·99
June	29·891	47·09	15·11	75·49	36·93	41·69	·83	·289	1·80	11·56	6·61	N.W.	37·99
July	29·867	46·07	15·17	76·08	35·58	40·03	·82	·258	2·10	13·56	7·10	N.W.	33·64
August	29·820	48·47	16 21	82 82	36·37	40·80	·79	·269	1·72	13 00	7·56	N.W.	47·95
September	29·773	51.12	17·39	89·45	38·82	42·24	·76	·280	2·20	14·31	7·92	N.W., S.E.	59·65
October	29·778	54·39	18·79	97·12	42·39	44 56	·73	·303	2·06	14·63	7·91	N.W., S.E.	82·93
November	30·065	57·67	19·18	101·91	46·19	46·49	·70	·326	2·78	12·88	7·50	N.W., S.E.	100·24
December	29·748	61·19	20·06	104·82	47·92	48·91	·67	·353	1·81	11·56	7·11	N.W., S.E.	86·99
Sum of all the Means	358·198	656·67	214·91	1120·71	516·17	545·89	8·94	3·796	22·71	139·88	86·83	..	700·45
Mean for 30 Years	29·850	54·72	17.91	93·39	43·01	45·49	·75	·316	1·89	11·66	7·24	N.W., S.E.	58·37

TABLE showing Excess of Spontaneous Evaporation over Rainfall at Hobart Town during the Five Years, 1866, 1867, 1868, 1869, *and* 1870.

		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Evaporation. Total amount for each Year.	Condensation. Total amount of Rainfall for each Year.	Amount of Evaporation in excess of Condensation for each year	
		In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	Inches.	Inches.	Inches.	
1866	Evaporation ..	6·39	5·85	4·45	2·16	1·39	2·22	1·42	3 00	3·81	5·09	3·71	4·97	44·46	..	..	
	Rainfall.....	·12	·55	2·38	1·02	1·82	1·86	2·52	·93	1·88	3·34	3·54	3·59	..	23·55	..	1866
	Evaporation. +	6·27	5.30	2·07	1·14	..	·36	..	2·07	1·93	1·75	·17	1·38	..	..	+ 20·91	
	Rainfall.....+	..	..	..	..	·48	..	1·10	..	..	..	..	..	..	..	..	
1867	Evaporation ...	5·06	4·86	4·96	2·21	1·20	1·40	2·62	2·98	3·12	5·40	6·64	7·14	47·59	..	..	
	Rainfall.....	1·76	·53	·86	·78	2·03	1·53	1·33	1·01	5·24	1·90	2·14	3·16	..	22.27	..	1867
	Evaporation .+	3·30	4·33	4·10	1·43	..	..	1·29	1·97	..	3·50	4·50	3·98	..	..	+ 25·32	
	Rainfall ....+	..	..	..	..	·83	·13	..	..	2·12	..	..	..	..	..	..	
1868	Evaporation...	2·37	5·16	5·54	3·06	1·61	·89	1·59	1·45	2·48	4·94	5·77	5·80	40·66	..	..	
	Rainfall.....	2·54	1·27	.47	2·09	·44	1·01	3·76	·33	2·71	1·83	·16	1·47	..	18·08	..	1868
	Evaporation .+	..	3·89	5·07	·97	1·17	..	..	1·12	..	3·11	5·61	4·33	..	..	+ 22·58	
	Rainfall.....+	·17	..	..	..	..	·12	2·17	..	·23	..	..	..	..	..	..	
1869	Evaporation ...	4·80	4·37	3·75	1·76	1·11	1·32	1·40	1·71	3·52	2·82	4·22	5·20	35·98	..	..	
	Rainfall.....	4·31	·81	1·58	·50	3·07	1·55	1·20	2·35	·98	3·32	1·87	2·33	..	23·87	..	1869
	Evaporation .+	·49	3·56	2·17	1·26	..	..	·20	..	2·54	..	2·35	2·87	..	..	+ 12·11	
	Rainfall.....+	..	..	..	..	1·96	·23	..	·64	..	·50	..	..	..	..	..	
1870	Evaporation ...	5·00	5·32	4·42	3·19	1·81	3·11	2·07	1·85	2·51	4·54	3·94	4·43	42·19	..	..	
	Rainfall.....	4·57	·35	·94	4·25	·59	2·32	2·61	1·02	3·17	2·34	4·82	·55	..	27·53	..	1870
	Evaporation .+	·43	4·97	3·48	..	1·22	·79	..	·83	..	2·20	..	3·88	210·88	115·30		
	Rainfall.....+	..	..	..	1·06	..	..	.54	..	·66	..	·88	..	..	..	+ 14·66	
														Total Evaporation in excess of Condensation for Five Years		95·58	

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REMARKS

ON THE

CLIMATE AND VITAL STATISTICS OF TASMANIA,

BY

E. SWARBRECK HALL,

M.R.C.S. ENG., HON. CORRESPONDING MEMBER OF THE STATISTICAL SOCIETY OF LONDON, CORRESPONDING MEMBER OF THE EPIDEMIOLOGICAL SOCIETY OF LONDON, &c.

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CLIMATE AND VITAL STATISTICS OF TASMANIA.

By E. SWARBRECK HALL,

Licentiate in the Science and Practice of Medicine; Member of the Royal College of Surgeons of England, &c. &c.; Honorary Corresponding Member of the Statistical Society of London; Honorary Corresponding Member of the Epidemiological Society of London; Honorary Corresponding Member of the Medical Society of Victoria; Fellow of the Royal Society of Tasmania.

The Monthly Reports I have for some years contributed to the Royal Society of Tasmania, which have been printed in its "Transactions," give a detailed analysis and comparison of the influence of all the recorded Meteorological phenomena on health and life. In my observations for the present occasion on the last fifteen years, the annexed tables of the deaths in the Registration District of Hobart Town, and of the whole Island, will be of some value in arriving at general conclusions as to the effect variations of the different phenomena have in increasing or diminishing the monthly and annual mortality. But as a necessary preliminary, too often overlooked in making calculations of death-rates, the numbers, ages, and sexes of the population must be given; and reference be made to the social changes, and the relative alterations in the constituent elements of the population, which the Colony of Tasmania has been undergoing in the period under review.

POPULATION.

The three Census enumerations of the Population of Tasmania which have been taken within the period under observation, 1857, 1861, 1870, contrasted in Table A, will afford a good insight into the elements of the population as regards sex and age. Unfortunately I failed in inducing the authorities in 1857 to embody the results of the Census of that year in annual, quinquennial, and decennial groups; and the old, irregular, and most conflicting groupings were continued, *i.e.*, "under 2," "2 to 7," "7 to 14," "14 to 21," "21 to 45," "45 to 60," "60 and upwards." Consequently accurate comparisons for that year in contrast with the Census of 1861 and 1870 cannot be given, but only a few general comparisons. The Table shows that in 1857, with a total population of 81,492, only 35,229 were under 21 years of age, with the slight preponderance of 309 females over males between the ages of 7 and 21; while in 1861, with a total population of 89,977, there were under 20 years old 41,649, with the increased number of 428 more females than males between 5 and 20 years old. In the last Census, 1870, (and it will ever be a source of regret to statisticians that the Census was not deferred until the return of the decennial period adopted throughout the rest of the British Empire), with a total population of 99,328, there were under 20 years of age 51,291, or considerably more than half of the whole, there being actually only 37 more males than females in that number, but really 291 more females than males between the ages of 10 and 20. Above 60 years old there were in 1857 only 2245 of both sexes—1610 males, 635 females. In 1861 there were 4166 above 60 years old, 3076 of them being males, 21 of them above 90 years old. In 1870 those of both sexes above 60 years old amounted to 6600, the males being 4758, the females 1842; of the men 36 were 90 years old and upwards, of the women 10. It thus appears that relatively the proportions of the population under 20 and above 60 have largely increased, and consequently those of the reproductive ages, relatively to the total increase of population, have greatly diminished. Between the ages of 20 and 40, too, the females in 1870 were 1193 more numerous than males. Adult males have of late years flocked to the diggings, &c. of the adjacent colonies, thus very considerably altering the proportion of bread-winners to dependents upon them, and diminishing both the marriage and birth rates. At the Census enumeration of 1857 there were recorded as living 6350 children "under 2 years old," while the births registered in the previous two years were only 5904, and at least 800 of them had died before the Census took place, so that there ought to have been living at the Census only 5104 children of that age, leaving out of consideration immigration and emigration, which do not materially alter the results. The 1246 more enumerated at the Census must therefore have been of births unregistered at the rate of 623 per

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annum. The subsequent Census enumerations do not exhibit nearly so great a discrepancy, but still a very considerable one, always to be calculated in estimates of the deaths to the births registered in any year under one year old. In 1860 the registered births were 3238 and the deaths under one year old 423, leaving 2815 living to be included in the Census of 1861, while the actual number enumerated was 3117; so that about 302 births in 1860 could not have been registered. In 1869 the births registered were 2859 only, and the deaths under one year old 289, leaving 2570 to be included in the Census of 1870, while the actual number was 2887, so that about 317 births in 1869 were not registered. There can be no doubt that many of the unregistered births are those of illegitimate children, and it is notorious that of those of this character dying the births of many are registered at the same time only as the death. Few deaths I am convinced have escaped registration since 1857, though at times persons who ought to set a better example neglect to register within the time prescribed by the law. Were a few of these persons proceeded against for the penalties prescribed by the Act, it would be highly conducive to prompt and accurate registration, and probably prevent some cases of infanticide.

In the Official Statistics laid before Parliament, and printed every year, a computation of the population is made for the end of each year by adding immigration to the Colony and births in the Island to the previous year's population, starting always from the Census, and then subtracting deaths in and emigration from Tasmania. The population thus computed for the end of 1860 was 88,053, while by the Census on the 7th April, 1861, it was 89,977. At the end of 1869 the computed population was 101,592, while by the Census on the 7th February, 1870, it only amounted to 99,328, being less by 2264. The able official Statistician of Tasmania (Mr. E. C. Nowell), who has so thoroughly analysed the Census returns of 1870, says:—"Such a result is certainly contrary to what might have been reasonably expected, on the assumption that a number of births are annually left unregistered, and it can only be explained by supposing that a number of persons of whom no record is kept annually leave the Colony."

I am indebted to Mr. Nowell's valuable labours for the data out of which I have constructed the following table:—

COMPARATIVE per-centages of the Numbers of the two Sexes in three Groups of Ages in the Population of Tasmania contrasted with that of England and Wales.

	CENSUS TASMANIA, 1870.			CENSUS ENGLAND AND WALES, 1861.		
Groups of Ages.	Males. per cent.	Females. per cent.	Mean total per cent.	Mean total per cent.	Males. per cent.	Females. per cent.
Under 15 years of age	40·43	45·85	42·89	35·66	36·70	34·62
15 and under 50	40·55	44·87	42·71	49·85½	49·19	50·52
50 and upwards	19·02	9·78	14·40	14·48½	14·11	14·86
			100·	100·		

This Table clearly shows that under the ordinary laws of mortality the death-rate of Tasmania should be greater than in England and Wales, as there is so much greater a proportion of the total population under 15 years of age. From 15 to 50 it is remarkable that there should be so many more females than males in Tasmania, and comparatively so much greater a disproportion of the sexes than in England. At 50 and upwards Tasmania and England are almost the same in the totals, but with a wide disparity in the relative proportions of the two sexes in Tasmania.

MARRIAGES.

The enumeration for the 16 years in Table B speaks for itself as to the annual fluctuations in the marriage rate; the large number for 1856 being caused by returned successful gold-diggers seeking wives among their former companions. It is satisfactory to see that since 1866, when the minimum of marriages was registered, there has been on the whole a steady increase with the exception of 1871. The promise of success that the Tasmanian gold-fields now give will, it is expected, give a further impulse to this desirable result.

BIRTHS.

In the year 1866 births as well as marriages were the lowest in the list. Since that year there has been a gradual increase, though it has not yet arrived at the number registered for the year 1857, the highest in the record. The difference in the average of the sexes at birth does not vary much from that observed in England and Wales. In every

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year more boys than girls were born. The least difference between the sexes was in 1864 and 1869, when only 31 more boys than girls were registered. The greatest difference was in 1870, when 176 more boys than girls were recorded. The average for the sixteen years would be:—Boys, 1575$\frac{1}{16}$, girls 1487$\frac{5}{16}$, or about 105$\frac{1}{2}$ boys to 100 girls—still-births are not registered. The birth-rate for the Census years was respectively about one in 25·10 in 1857, or nearly 4 per cent.; one in 28·06 in 1861, or about 3$\frac{1}{2}$ per cent.; one in 32·52 in 1870, or about 3 per cent.

DEATHS.

Table C gives the deaths registered in all Tasmania for the fifteen years 1857-71, grouped in annual ages up to 5 years old, in quinquennial from that to 20 years old, and in decennial for all ages above 20. This Table examined in conjunction with that of the population, Table A, exhibits results of the most surprising but, at the same time, of the most gratifying character. It gives undoubted statistical evidence that the deaths in Tasmania have been undergoing a great reduction of late years, not merely in absolute numbers, but still more when regarded relatively to the increase of population; and what is more wonderful, while that increase has been of young and old persons, or those whose death-rate according to the ordinary laws of mortality is greater than those of the middle aged. The average of the first seven years in the Table, 1857-1863, is 1485$\frac{1}{7}$ deaths, while that of the last seven years is only 1366$\frac{1}{7}$. Between the total population of the Census of 1857 and that of 1870 there is a difference of 17,836 individuals, mainly of children under 10 years of age, and of persons 60 years and upwards old. Contrasting the deaths in the Census years 1857 and 1870 with the total population in the same years, it will be seen that the death-rate fell from 17$\frac{1}{2}$ per 1000 in the former to 14 per 1000 in the latter years. The actual number of deaths was nearly the same, and neither of the years was an epidemic year or exceptional in climatic character. In fact, except that there was a much smaller rainfall in 1857, the means of the meteorological phenomena in both years were almost identical. Taken on the whole, perhaps, the seasons during the last seven years were more favourable than during the first seven years, but not to such an extent as to account mainly for the lessened death-rate. During the first seven years there were epidemics of diarrhœa, whooping-cough, and scarlatina in 1858, influenza in 1860, measles in 1861. In the last seven years, of measles in 1867, whooping-cough 1868-9. In 1871 there was an epidemic of scarlatina in the northern side of the island, Launceston and its vicinity, but not in Hobart Town or its neighbourhood. In the first year of the last seven years, 1865, the smallest numerical mortality occurred; and I remarked in my report to the Royal Society for that year:—"The weather generally in 1865 was of the most favourable character. * * * Two causes, principally, seem to have operated in producing the annually decreasing rate of mortality in Tasmania. The first being the constantly increasing proportion that those born in the Colony bear to the imported inhabitants; at the same time, by the ordinary laws of mortality, a disproportionately large share of children adds to the death-rate. The second seems to have arisen from climatic improvements, the meteorological phenomena of late years having certainly been more auspicious to health and life,—though, as these changes are usually cyclical in their character, we must expect a return to the old type for another period of years, ere long. Sanitary improvements, moreover, and specially the enlarged and much purer water-supply in both the southern and northern capitals, has doubtless improved the health and reduced the deaths of their citizens. Were as valuable a change effected in the sewerage of the two towns, in the ventilation of our houses, in the abolition of intramural interments, in more watchfulness over the purity of our food supplies, and last, though by no means the least, less intemperance in drink, the mortality rate might be reduced to an amount which the most sanguine of sanitarians have never yet ventured to predict, and which no country in the world has so far exhibited. If we will only take all the advantages science affords to utilise and improve the blessings the Giver of all good has conferred upon our beautiful Island, there will indeed be a happy future for little Tasmania amongst the great nations of the southern hemisphere." Though the foregoing remarks were penned more than six years ago, and the predictions have to some extent been fulfilled, yet they are on the whole as applicable at the present time as when written.

The death-rate for all ages in England and Wales averages about 22 per 1000 per annum. The death-rate of Tasmania on the average of the last three years, 1869, 1870, 1871, is 13$\frac{1}{2}$ per annum, or less than the English by 8$\frac{1}{2}$ per 1000. The healthiest registration districts in England and Wales have 14 to 15 per 1000 per annum. Dr. William Farr, the eminent head of the vital branch of the Registrar-General's Department in England, now President of the Statistical Society of London, considers that 17 per 1000 per annum may be assumed to be a normal death-rate where the population is fairly proportioned according to sex and age. The data I have now adduced prove that the Tasmanian death-rate is far less than the normal standard, even with a population having so much greater a proportion of the very young and the very old.

The column in the death-table C of those under 5 years old is a very remarkable one. It will be there seen what a large reduction the death-rate of the last year, 1871, (the smallest in number) has, compared with the first year, 1857—no less than 150 in number, or three-tenths of the whole. The death-rate, however, is best calculated on the

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numbers living in the Census year 1870 under 5 years old, *i.e.*, 14,302. The deaths of that year being 409, the death-rate would be only 29 per 1000, or 2·90 per cent. Where in the wide world can we find a parallel to this? In England and Wales it is 6·75 per cent., and in its 63 healthiest districts, 4 per cent. Surely the loving, anxious, wealthy parents in England who deplore so hopelessly the deaths, one after another, of their little ones—often to the total extinction of ancient time-honoured families—should try the wonder-working influences of this genial climate, and so have a chance of leaving their names and possessions to healthy surviving offspring! Even the first year of life shows how auspicious the Tasmanian climate is to life at that early age. The average registered births is 3·063 per annum, without adding the about 300 children annually born but unregistered. The death average the table shows is only 322$\frac{1}{3}$ per annum for 15 years, (much less, however, taking only the last three years), or about 100$\frac{1}{2}$ per 1000; while the English rate is nearly double that amount, being 165$\frac{1}{2}$. If, however, we calculate on the number of registered births in 1871, and the number of deaths under one year old in the same year, we have a death-rate of only 87$\frac{1}{2}$ per 1000. I might pursue a similar investigation through all the other groups of ages in the table with an equally satisfactory result, but it suffices with sanitary statisticians to show the infant death-rate to prove the healthiness of any climate or community.

Table D is compiled from the published statistics of the Government Statistician for the three years, 1868, 1869, 1870; but for the data of 1871 I am indebted to Mr. Seagar, of the Registrar-General's Department, to whose careful management the registration of vital statistics owes so much of its efficiency. In most respects I have adhered to the old classification and nomenclature of Dr. Farr, as it affords the best means of comparison with the records of past times and of other countries. I have not, however, overlooked the nomenclature of diseases adopted by the Royal College of Physicians of London, published in 1869, about which I had the honour of having my views solicited by the President of the College.

The average deaths of the four years it will be seen is 1389$\frac{3}{4}$. The *Zymotic* class has 205$\frac{3}{4}$ only of the whole, or less than one-sixth. The English proportion of this class to the total deaths is very much greater, being nearly one-fourth. The second, or *Constitutional* class of diseases, is almost identical in numbers with the first class, *i.e.*, 206$\frac{3}{4}$, and differs little from the English proportion. The third class, *Local Diseases*, has 624$\frac{1}{4}$ of the whole, or very nearly one-half, and about one-fifth more than the English proportion. The fourth class, *Developmental Diseases*, has 223$\frac{3}{4}$ deaths, nearly one-sixth of the whole, while the English proportion is little more than one-seventh. The fifth class, *Violent Diseases or Deaths*, has 104$\frac{3}{4}$, or about one-thirteenth of the whole, while the English proportion is only somewhat more than one-thirtieth.

In the Zymotic class it will be perceived that *Small-pox* has no share as yet in Tasmania, the disease never yet having shown itself in the Island. Whenever it does appear, it will find thousands of subjects to victimise unprotected by vaccination; for this well-proved prophylactic to small-pox has been fearfully neglected, as I demonstrated in my official reports for the three and a half years that I was Superintendent of Vaccinations for Tasmania. Since that office, and the public provision for vaccination then existing, was abolished in the beginning of 1866, vaccination, either public or private, has been almost *nil*, with the exception of a spurt when the fear of the importation of small-pox across Bass' Straits from Melbourne created a temporary panic. The Official Statistics show that in 1868 the numbers vaccinated successfully at Hobarton, Launceston, and Campbell Town Hospitals were only 25,—these three Institutions being the only places where public provision is made for vaccination. In 1869, when the small-pox panic occurred, 464 successful vaccinations were returned from the Hospitals in Hobart Town and Launceston, mostly of children far beyond the age required by the Vaccination Act. In 1870 the Official Statistics say:—"None were performed at any public institution in 1870." For 1871, I believe, there will also be a '*nil*' return. No colony could more easily be protected from the invasion of this terrible scourge of the human race than the Island of Tasmania, were efficient provision made for vaccination. It is impossible for private medical practitioners to keep up a continuous and efficient system of vaccination. The 8000 deaths last year from the small-pox epidemic in London, (not yet subsided), owing to the inefficient measures for public vaccination as yet made or enforced, ought to be a timely warning to us. The exhaustive Report from the Select Committee on the Vaccination Act, ordered by the House of Commons to be printed 23rd May, 1871, ought to be studied by every statesman and legislator throughout the world, as establishing the efficacy of proper vaccination to render small-pox comparatively harmless, and utterly refuting the objections of the anti-vaccination fanatics. The deaths from *Chicken-pox* and *Measles* in the four years tabled are too trifling for remark. Measles, however, has frequently been epidemic in the 15 years under notice, and with considerable fatal results, both directly and in their sequelæ. *Scarlatina* has not been epidemic in Hobarton or the southern side of the Island for some years. In 1843 and 1853, however, there were severe epidemics of it, and in the latter year with great fatality. Since then there have been at times a few scattered cases, but never prevailing to any great extent. *Diphtheria* it would appear is now permanently settled in Tasmania, every year giving a few cases.

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It was unknown in Tasmania until January, 1859, when two cases occurred almost simultaneously in two inland districts fifty miles apart, the origin of which was never traced. *Croup*, in my opinion, ought not to be tabulated in the "miasmatic order" of the "zymotic class." I should rather place it with diseases of the "respiratory organs," as it is in the "Nomenclature of the Royal College of Physicians." I have never seen anything of a contagious character in its prevalence, but always traced it to sudden changes of temperature, which is more especially the case in Hobarton, which furnished the greater proportion of the cases recorded. In nineteen years' practice in various inland districts I never met with a case. Nevertheless, the disease seems to have abated much in late years even in Hobarton, for while there are only 69 deaths from it in all Tasmania during the last four years, there were 102 recorded from it in the Hobarton Registration District alone in the first four years of the series I have tabulated, 1857, 1858, 1859, 1860. Compared with the death-rate from this disease in England and Wales, on a similar amount of living population, the 59 deaths in four years show a proportion per annum of 17 in Tasmania to about 26 in the former. As a standard for comparative examination for the deaths from various diseases in Tasmania, I have adopted Dr. Farr's Table of 15 Years Averages on each one million of the living Population in England and Wales, from the years 1850 to 1864 inclusive, in page 191 of the Registrar-General of England's Report for 1866. I have, to save broken numbers, estimated the living population-average of the four years in Tasmania at 100,000; I have, as much as possible, avoided decimals so as not to confuse ordinary readers. *Whooping-cough*, with its total of 119 deaths, was confined to the two years 1868, 1869. In England the death-rate from this disease is about 51½ per 100,000 per annum, while in Tasmania it is only 29¾. As in England, so in Tasmania, females die from this disease in greater number than males—the share of the 119 being 65 females, 54 males. Of course the ordinary rate of mortality at the early ages recorded is just the reverse—more boys than girls. *Typhus, Infantile and Typhoid Fever*, show so small a number of deaths in the four years, 99, that thoroughly justifies me in designating, as I did many years ago to the Epidemiological Society of London, this climate as an "anti-febrile" one, owing to the abundance of ozone in its atmosphere, which is so well proved to be the unfailing destroyer of all aërial impurities. The English proportion would be above 91 per annum, while the Tasmanian is not quite one-fourth of that number, *i.e.*, 24¾. *Erysipelas* and *Metria* need no comments—though the latter frequently, in former times, assumed formidable aspects when we had a large number of lying-in female convicts, crowded into our public institutions. *Dysentery* 72 deaths, being an average of 18 per annum, is much more fatal than in England, which has only an annual average of about 8½ in the same amount of population. Moreover, the deaths from this disease have greatly diminished of late years, for in the four years, 1857-8-9-60, Hobarton Registration District alone averaged 22¼ deaths per annum. This disease used to be very prevalent on the Convict stations, now, thanks be to GOD! a thing of the past. *Diarrhœa* is the worst feature in our zymotic class, showing in the Table an average of 62¾ deaths per annum, and standing fifth on the list of the most fatal causes of death in Tasmania. Yet after all it is much less than the English rate, which is about 80¾ per 100,000 of the living population. It is more especially prevalent during the summer months of December, January, February, and March, and at times is quite an epidemic. For this disease in Hobart city, and Launceston town, I shall have some important remarks to make hereafter. The few cases of death from summer *Cholera* need not be analysed. The terrible Asiatic epidemic disease of that name has happily never yet appeared in Tasmania. From my experience of it in Liverpool, on its first outbreak in England in 1832, I hope I may not live to see an epidemic of it in this Island. *Ague* is not endemic in Tasmania,—the three deaths tabled, between 60 and 70 years old, were of persons who had brought the disease from elsewhere. *Rheumatism* has an annual average of 9¾ deaths in the Table. The English rate, on the same population in number, would be about 10½, so that the very general impression of Tasmanians that this disease is more fatal than in England, the data adduced prove to be erroneous. Of the remaining diseases in the zymotic class few remarks are required. *Syphilis* has only one-fifth of the death-rate for this disease that it has in England. I never saw in Tasmania such horrible cases as I have seen in the Hospitals of Liverpool, Dublin, and London. The returns under the head of *Alcoholism* are not to be depended upon—deaths really originating from intemperance in intoxicating drinks are rarely certified as such, but recorded from the organic diseases induced thereby. The deaths tabled in the Official Statistics under the appellations of *Influenza, Coryza, Catarrh, &c.* I have removed to diseases of the respiratory organs as Catarrh. No really epidemic influenza has prevailed in Tasmania during the last four years. *Carbuncle* and *Boil* I have also transferred to Order 8—*Diseases of the Integumentary System* in Class III. *Local Diseases*. *Gout* rarely exists or causes death in Tasmania. *Dropsy* had 104 deaths, very equally divided amongst the four years. The average, 26 per annum, is about 19 less than the English rate. *Cancer*, 170 deaths, is also fairly apportioned to each year; the average, 42¼, exceeds the English rate by about 9¼. In the English rate the females are nearly double the males. In Tasmania, females were 24, males 18¼. The proportion is much the same as in England, when the smaller number of females in the Tasmanian population at the ages most subject to cancer is considered. The remaining deaths in the "Diathetic Order" of the "Constitutional Class" are too few for analytic comparison. *Scrofula*, the first in the 2nd Order, "Tubercular Diseases," had only 13 deaths in the four years, or 3¼ average per annum. The English rate is more than four times as great, *i.e.*, 15¼. With the pure dry air, bright skies, moderate temperature, and comparatively uncrowded habitations in Tasmania, all

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classes obtain abundance of animal and other food, and live much in the open air, as it is rare indeed for the weather to necessitate any person remaining within doors many hours together. *Tubes Mesenterica* had an average of 6¼ deaths per annum, the English rate being about 26½. *Phthisis* had in the four years 375 deaths, or 93¾ average per annum; the English 15 years' average is 267½. Phthisis stands at the head of all diseases causing death in the English Tables, and is considerably above the next in numbers, which is bronchitis. In Tasmania, phthisis holds the third place, old age and heart-disease having the precedence, the former by a very large amount. As the question of the prevalence of consumption in the Australian Colonies has of late been much discussed in the neighbouring colony of Victoria, and commented on by the English medical press, I shall examine the question closely, as much statistical data has been applied fallaciously. During my nearly 39 years' residence in various parts of Tasmania, I have devoted much attention to the subject, and the data I have garnered enables me positively to state that consumption in Tasmania, in proportion to the population, is very much less rife amongst the whole inhabitants, both imported and born in the Island, than in England and Wales. Also that those born in Tasmania are vastly less subject to the disease than their English progenitors and compeers. According to the Registrar-General of England's Tables for the fifteen years, 1850-64, the average annual deaths from phthisis was 2675·1 per million of living population, or one death to about 374 persons (373·86), very nearly 2¾ (2·67) per 1000. The estimated population of Tasmania on the 30th June, 1871, was 101,869, (see Table C), but for a basis of calculation I will take it as only 101,500. In that year the deaths registered from phthisis for all Tasmania were 85, or one to 1199 living persons, or less than one-third of the English rate. But suppose we take the average deaths of the last four years from this disease in Tasmania, say 94, and estimate the average population at only 98,000, the deaths would be about one in 1042½. Though Victoria has a much less favourable death-rate from consumption than Tasmania, yet it is greatly more favourable than England. In 1869, with an estimated population of 696,942, there were 862 deaths from phthisis, being about one death to 808½ living persons, or 1·23 per 1000, which is less than the half of the English rate. It has been said that consumption has gone on increasing from year to year in Victoria, but the following returns do not support that assertion, when we take into consideration the annual increase of the population, and remember that of late years these colonies have been much resorted to by sufferers from consumption.

DEATHS from Phthisis in Victoria for 11 *years*, 1859-1869.

Years.	Males.	Females.	Total.	Years.	Males.	Females.	Total.
1859	370	262	632	1865	436	292	728
1860	440	326	766	1866	456	300	756
1861	443	310	753	1867	448	331	779
1862	426	281	707	1868	414	319	733
1863	419	298	717	1869	495	367	862
1864	406	267	673				

The average per annum of the first five years is, in the above Table, 715, while the average of the last six has only increased to 755—forty more merely, notwithstanding the enormous increase in the population from 541,025 in 1861 to 696,942 in 1869. In 1861 the deaths were one to 718¼ living, in 1869 only one to 808½. The returns for 1870-1871 are not yet to hand. To select Melbourne City, the great rapidly-increasing capital of Victoria, or its Hospital or other public institutions, as a basis for the death-rate from consumption in Victoria, is most disingenuous. To the capital and its charitable institutions flock all those numerous foreign waifs of humanity who have no home or relations to receive them when sick unto death from consumption. It is so even in Hobarton, though to a much smaller extent. To complete this subject, I will here anticipate the analysis of the deaths from consumption in Hobart City and its associated Registration District, illustrating, as it does, the assertion in the previous paragraph. In Table F it will be seen that in 1870 there were 43 deaths from phthisis in the Hobart Town Registration District; that is, nearly the half of those recorded in Table D (90), for the whole Island, though its population is only about one-fourth. The table shows the ages, and it will be seen that from 15 to 30 is the age of greatest mortality from this disease, as it is in England, there being as many deaths in the five years 15 to 20, as there is in the ten years 30 to 40. The six months, March to August inclusive, have 27 of the 43 deaths, though the autumn months of March and April have a warmer mean temperature than the spring months of September and October. The population being 25,004, the death-rate from consumption would be one to 581½ living persons, or about 1¾ per 1000. This is even considerably less than the rate for all England and Wales. Of these 43 deaths 14 died in the public Hospital—three of them being sailors from ships in port; another foreign sailor died in the city; another of the deaths was a visitor from Victoria; two more were from country registration districts. Of the 43 there were 21 males, the youngest being

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only 14 months old; 22 were females; 18 only were born in Tasmania, the other 25 were of various countries, principally England and Ireland. The Tasmanians were equally divided between the sexes, seeing that 59,119 of the total population of Tasmania at the Census in 1870 were born in Tasmania, and allowing a proportionate share to the Hobarton Registration District, say 18,000 Tasmanian born, the death-rate would be the very small number of one per 1000, while the rate of the foreigners, there being 25 deaths in 7000, would be above 3½ per 1000. In 1871 there were only 35 deaths from consumption, though the total deaths of that year for the Hobarton Registration District were 7 more than in the previous year; 23 were males, 12 females; 14 only were born in Tasmania, 6 were English, 7 Irish, 1 Scotch, 7 from other countries—three of them sailors from ships in harbour. Of the preservative and curative effects of the Tasmanian climate to those having the consumptive diathesis, I could, from my personal experience, give many illustrations; but one striking instance may suffice. I know a lady, now in her 65th year, who when 26 years old left England with her husband for this Colony, not being expected either by her husband or father, both medical practitioners, to survive the voyage; she had lost all her offspring either by miscarriage or premature births. Since her residence in this Island she has never had a consumptive symptom, and has a grown up family all free from any sign of the tubercular diathesis. She was the oldest of three sisters,—the other two had many years succumbed in their native land to this dire scourge of England's daughters.

In the interesting and valuable paper of Dr. Theodore Williams, discussed at the Royal Medical and Chirurgical Society of London, and reported in the *Lancet* of January 21st, 1871, it is said:—"That between the ages of 20 and 30, the most common period of attack for both sexes, about 7 per cent. more females were attacked than males; and again, between 10 and 20, 11¾ per cent. more." Now the great bulk of the population of Tasmania, between the ages of 10 and 30, is native born, with a preponderance of females; and I have shown how few die from consumption. In many of those few, the hereditary tendency is so strong that as many as three individuals in the same small family have perished by this disease. A girl of 14, daughter of an English miner, working in the coal mines on Tasman's Peninsula, died last year in the Hobarton Hospital; she was born in Tasmania. Her mother and an older sister, both English born, had previously died in the same Institution from phthisis. A youth of 17, in last year's deaths, lost his mother many years ago from the same disease; she also was English born. Dr. Williams gives only one instance out of 802 of his 1000 cases, where the patients were still living, where an individual survived an attack of consumption "more than forty years."

Hydrocephalus had 67 deaths in the four years, and rather unequally divided amongst them, but with an average of 16¾ per annum; the English rate being 39½.

Of the 3rd Class, "Local Diseases," the 1st Order is, "Diseases of the Brain and Nervous System" *Cephalitis* had 50 deaths, with an average of the four years of 12½, the English rate being 18¾. *Apoplexy* had 177 deaths, the average being 44¼, which is within one of the English rate. *Sunstroke* had only one death so registered; but I am certain that many of the other deaths in this Order so originated, our very diaphanous atmosphere making the sun's rays more potent than in the hotter, but more hazy, climates on the Australian Continent. *Paralysis* had 160 deaths, with an annual average of 40; about 6¾ less than the English rate. *Insanity* it would be futile to comment upon, as the deaths, directly, are so few. Most of those who die in the Asylums at New Norfolk and Port Arthur are registered from the disease actually terminating life. This disease, I believe, is quite as prevalent in Tasmania as it is in England. *Epilepsy* had an average of 8¾ deaths to the English rate of 11½. *Convulsions* had an average of 79 deaths, while in England it was 131. But in either country this registered cause of death is not a reliable one; it is so often only the last symptom of other diseases. *Brain Diseases* is also an unsatisfactory grouping of various diseases of that organ. There were 126 deaths so tabled, with an average of 31½; the English rate being only 21¾. Until I made these calculations I was under the impression that the diseases in this Order, on the whole, caused more deaths than in England—but Tasmania has only a rate of 217 per 100,000, while England has 278½. It will be seen by the Table that, with the exception of cephalitis and convulsions, the majority of deaths in this Order is of old people; and I know that a large proportion of them were the result of intemperance in drink.

The 2nd Order, "Diseases of the Organs of Circulation."—In *Pericarditis* the deaths are almost the same as the English rate, 2¾ to 3. *Aneurism* had an average of 7¼ deaths for the four years; the English rate is only a trifle more than 1¾ (1·81). *Heart Disease*, the second in the rank of the most fatal causes of death in Tasmania, had 377 deaths, with an average of 94¼ per annum. 1868, the most fatal to life of the four years, as well as the most fatal since 1861, had many more than the average, *i.e.*, 113. The English rate is only 77½. On the whole, of this Order, the Tasmanian rate exceeds the English by 21. As the remnants of the convict class die off, I expect that this Order of diseases will not so much exceed the English rate,—though the abundance of ozone in the air, and the great and sudden variations of temperature and atmospheric pressure, must always have a powerful effect on the organs of circulation, as well as on the nervous system and the organs of respiration, even in the Tasmanian born. It will not

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be out of place here to remark on the weather of the fatal year, 1868. The mean for the year of atmospheric pressure was 29·911, exceeding the 30 years' average by + ·061. The maximum of the year was 30·690; the minimum 29·111; the extreme range, therefore, 1·579 inches. The monthly ranges were also unusually high. The mean temperature by the observed air-thermometer was 56·06, which is + 1·34 more than the 30 years' average. The maximum was 98 degrees, the minimum 30. Daily range of temperature mean was 19·48 degrees, being + 1·57 above the 30 years' mean. The maximum was 23·10 degrees for March; the minimum 16·68 for July. The greatest range on any day was 48 degrees in March, and 45 in November. Solar intensity mean was 96·27 degrees, which is + 2·88 above the mean of 15 years. Elastic force of vapour mean was ·321, which is + 5 above the 30 years' average. Humidity mean 71·58, was — 3·42 less than the average. Rainfall amounted to only 18·08 inches, being — 4·63 below the 30 years' average. The days on which rain fell were 112, which is — 27·88 below the 16 years' average. Ozone was 7·64, being + 0·40 above the 14 years' average. Wind-force was 630·28 lbs., being — 70·17 lbs. below the average—June having the smallest, 8·06 lbs.; October the largest, 97·80 lbs.

The 3rd Order of the "Local Class" is "Diseases of the Organs of Respiration."—*Laryngitis* had only 6 deaths, with an average of 1¾; the English rate is 6½. *Catarrh* had 47 deaths, with 11¼ average; but this cause of death is not calculated in Dr. Farr's English Tables,—I have no doubt, being embodied in bronchitis or pneumonia, the usual result of catarrh where death ensues. *Bronchitis* had 214 deaths, with an average of 53¾; the English rate being very much higher, *i.e.*, 134½. This cause of death is second in the order of fatality in England, being only exceeded by phthisis. In Tasmania it falls to the 7th place. *Pleurisy* had 51 deaths, with average of 12¾, being nearly three times as great as the English rate, which is only 4¾. *Pneumonia* had 245 deaths, with an average of 61¼. The English rate is much higher, more than twice as much, *i.e.*, 124. I have often had occasion to remark that our English notions of the lethal effects of sudden variations of temperature do not hold good in Tasmania, where the daily range of temperature, the worst feature in its climatic character, as may be seen in the Meteorological Tables, is so great—the mean for 30 years being 17·91 degrees. *Congestion of Lungs, Pulmonary Apoplexy* had 50 deaths, with 12½ average, does not enter into Dr. Farr's tables of calculation. *Asthma* 42 deaths, average 10½, is much less than the English rate, which is 23¼. *Lung Disease* had 43 deaths, with average of 10¾; the English rate being 17½. The whole of this Order of Diseases of the Organs of Respiration in Tasmania had a total average death-rate for the four years of 174¾; the same total in the English Tables being 311. Adding pulmonary consumption, with hæmoptysis, to the Tasmanian rate; and the same diseases, with influenza, to the English, we should have a rate for all Diseases of the Respiratory Organs: Tasmania 269¼ only, to England 578½—or considerably less than half. I feel very proud that the honour of demonstrating so conclusively this most important fact in favour of my adopted country, and the birth-place of all my living children, should have devolved upon me. It is a grand result of the many years' incessant labour I have devoted to the sanatory statistics of Tasmania. The Isle of Wight has a high health character in the English Tables, and is a place much resorted to by invalids from all diseases. Its death-rate on an average of the 10 years, 1851-60, is only that which Dr. Farr assumes to be the normal death-rate, *i.e.*, 17 per thousand; yet the Island of Tasmania, with nearly double the amount of population, has a death-rate much less on the average of the 10 years, 1861 to 1870, namely 14¼ per 1000.

"Diseases of the Digestive Organs," is the 4th Order of the 3rd Class. *Gastritis*, with its 3¾ average of annual deaths, is almost identical with the English rate. *Enteritis* 79 deaths, has 19¾ annual average. The English rate is only 18. *Peritonitis* has an average of 5 deaths per annum. The English rate is 7½. *Ascites* has but ¾ annual average deaths. The English rate is 3¾. The deaths following, until we come to stomach disease, are too small for useful comparison, but are all less than the English rate. *Stomach Disease* has 33 deaths, and an annual average of 8¼. The English rate is nearly 13. *Hepatitis* has 4¼ average annual deaths. The English rate is 7½. *Jaundice, Gallstone, &c.*, has an annual average of 7¼; the English rate being not quite 7. *Liver Disease* has 99 deaths, and annual average 24¾. The English rate is only 22. *Spleen Disease* has no deaths, though the English rate is 3½. Comparing the death-rate of all the Diseases of the Digestive Organs between Tasmania and England, the former has 81 average annual death-rate, the latter 101½.

Order 5 of the 3rd Class, is "Diseases of the Urinary Organs." *Nephritis* had an average of 2 deaths per annum, the English rate being a little more than 1¼. *Ischuria* was ¼ average to ⅛ of the English rate. *Nephria* had 51 deaths, with average of 12¾ annually. The English rate is only 5½. *Diabetes* had an annual average of 1¾. The English rate being 2½. *Stone, Gravel* had an average of ¼ only; the English rate being a little more than 1. *Cystitis* had an average of 5 deaths annually, the English rate being not quite 1½. *Kidney Disease* had 55 deaths, with average of 13¾. The English rate is 10½ only. On the whole Order the Tasmanian death-rate is 36 per annum, while the English is not quite 23.

Order 6 is "Diseases of the Organs of Generation," which on the whole has a death-rate of 2¾, the English rate being rather more than 5.

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Order 7 is "Diseases of the Locomotive System," the whole rate of which is 4¾, to the English 7¼.

Order 8 is "Diseases of the Integumentary System," in which I have included boil, carbuncle, &c., the death-rate of all being 3¾, while the English is a little more than 5¼.

The next Class is "Developmental Diseases," in which those of children constitute the first Order. On the whole the death-rate is 34¾, *Premature Births* and *Teething* embracing 127 out of the 138 total deaths. The English rate is 99½; (premature births having 72½ of the average—a much larger proportion than in Tasmania, which is only 16¼—and teething 33¾), the Tasmanian being only 15¾.

The 2nd Order, "Developmental Diseases of Adults," is not reliable; as to *Childbirth*, death from any disease almost of the female organs of reproduction, at any period of life, is so classed. The one I have recorded as *Prolapsus uteri*, between 60 and 70 years old, is tabulated as childbirth in the official return. Only those diseases or causes of death which happen within a brief period after parturition, and directly consequent upon that process, should be classed as childbirth. Even then it is much better to specify the cause of death separately, as flooding, puerpural convulsions, rupture of the uterus, &c. On the whole Order the death-rate was 16½, the English rate being 11¾.

"Developmental Diseases of Old People," is the 3rd Order of this Class, and constituted by *Old Age* only. The Tasmanian deaths so registered were 502, being about one-eleventh of the deaths from all causes in the four years. The annual average is 125¾, the English being 143¾.

"*Diseases of Nutrition*" is Order 4 of this Class, and formed by *Atrophy* and *Debility* alone. It is not a reliable nomenclature, for any long-continued wasting disease is apt to be registered under this head. The average, 47¼, is not half the English rate, which is 104¼. The death-rate of the whole of Class 4 in Tasmania is 223¾; in England it is 359¼.

Deaths proceeding from violence of any kind constitute the 5th Class, the 1st Order of which is "Accident or Negligence." *Fractures, Contusions, &c.* had a large proportion of the deaths, 138 out of 383, with an annual average of 34¾. The English rate, in the Table of Dr. Farr, which I have adopted as a standard of comparison, is only calculated on the five years, 1860-1864, instead of the fifteen years in all the preceding comparisons, and is only 28½. *Wounds, Gunshot,* and *Cuts, Stabs, &c.* in Tasmania had a united average of 3½ deaths per annum, the English rate being not quite 1. *Burns and Scalds* had an average death-rate of 19¾; the English rate is not quite 14¾. *Poison* was only ¾ average deaths per annum—the deaths so caused being 1 in 1868, 2 in 1869, none in 1870-71. The English rate is 1¼. *Drowning* had an average of 28¾, many of them occurring in vessels at sea, and registered on arrival in the ports of Tasmania. The English rate, which does not include drowning elsewhere, is only a little more than 12 per 100,000 per annum. *Suffocation* had an average rate of 4; the English rate being not quite 5¾. *Bite of a Snake or Insect* had 3 deaths; 1 in 1868, 2 in 1869—all were, I believe, from snake bites. In an article "On Snake Bites," contributed to the Medical Society of Victoria, and published in the April number of the *Australian Medical Journal* of 1859, I gave my Tasmanian experience on this subject. The *Unspecified Accidents* had a slightly lower rate than in England. The death-rate for all causes in this Order is 95¾ for Tasmania, and only 67¾ for England. The cause of this excess in the former I cannot comprehend; for in England the mines, manufactories, &c. cause so many accidental deaths that we do not suffer from in Tasmania, that I should have expected the mortality here to have been much less than in England, for the deaths at sea only form a small share of the overplus.

The 3rd Order, *Homicide,* had an annual average of 3 deaths; the English rate is not quite 2.

The 4th Order, *Suicide,* had, from all the different means of committing it, an average of 6 annual deaths. The English rate is not much more, not quite 6¾. *Hanging* is by far the most usual mode suicides have recourse to in England. In Tasmania it is only a trifle more than by *cuts and stabs,* and by *drowning.*

The whole of the 5th Class in Tasmania had a death-rate of 104¾ per 100,000 per annum, while in England, on the same amount of population, it is only 75¼. *Unspecified Causes of Death* in Tasmania have a death-rate of 24½, in England only 17¾.

Longevity in Tasmania, on the total population both of native-born and imported inhabitants, judging from the death-rates, seems to be very great. The Island, of course, has not been colonised long enough to furnish data for an exact calculation of longevity in the native-born alone, as there are as yet but few of them above 60 years old. Taking the healthy Isle of Wight for a standard of comparison on behalf of England, as to the death-rate in persons above

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60 years old from all causes, the contrast with Tasmania is very much in the latter's favour. At 60 to 70 years old in the Isle of Wight, in the year 1866, the death-rate per cent. of those living at that age was 5. On the average of the four years' deaths in Tasmania at the same age, the death-rate was only four per cent. of the number living at that age by the Census of 1870. At 70 to 80 years of age the Isle of Wight death-rate was 12¼ per cent., the Tasmanian only 9. At 80 and all ages above the death-rate in the Isle of Wight was 29 per cent., while Tasmania had only 26. For all England the rates were, about 6¼, 14, and 36½ respectively. It would thus appear that the chances of long life in Tasmania, even for the imported inhabitants, is much greater than in England,—though a large proportion of those over 60 years old have been a depraved class from the British Isles, and hard livers in this Colony. The oldest death ever recorded in Tasmania was of a man at 108 years of age, but there have been several above 100 years, *i.e.*, 13 from 1851 to 1871 inclusive. Only a few weeks ago a man aged 100 died in the Hobarton Hospital, and he had lived 67 years in these Colonies. His death, too, was caused by a fall fracturing the upper part of the thigh bone, and not from natural decay or disease. He was, moreover, both active and intelligent previous to the accident. A woman of the well-ascertained age of 105 years died under my care when I had charge of the female Invalids about 18 years ago. Another, aged 104, I knew to be able to ride about the country on horseback, Peruvian-fashion, when she was 100 years old. The death in the Table in 1869 was a man aged 103 years and 9 months old.

DISEASES causing Death in Tasmania arranged in the order of their fatality, as shown by the Annual Average of the Four Years—1868, 1869, 1870, 1871—*in Table D.*

1	Old Age	125¾	37	Stomach Disease	8¼	73	Laryngitis	1¾
2	Heart Disease	94¼	38	Aneurism	7¾	74	Hæmoptysis	ditto
3	Phthisis	93¾	39	Jaundice, Gallstone	7¼	75	Cyanosis	ditto
4	Convulsions	79	40	Tabes Mesenterica	6¾	76	Gun-shot Wounds (Accidental)	ditto
5	Diarrhœa	62¾	41	Cystitis	5			
6	Pneumonia	61¼	42	Erysipelas	4¾	77	Intussusception	1¾
7	Bronchitis	53¾	43	Hepatitis	4¼	78	Syphilis	1
8	Atrophy and Debility	47¼	44	Suffocation	4	79	Gout	ditto
9	Apoplexy	44	45	Mortification	3¾	80	Hernia	ditto
10	Cancer	42¾	46	Ileus	3¾	81	Boil, Carbuncle	ditto
11	Paralysis	40	47	Other unspecified Accidents	ditto	82	Ague	¾
12	Fractures, Contusions, &c.	34¾	48	Scrofula	3¼	83	Ascites	ditto
13	Brain Disease	31	49	Murder and Manslaughter.	3	84	Ulceration of Intestines	ditto
14	Whooping-cough	29¾	50	Intemperance	2¾	85	Ulcer	ditto
15	Drowning (Accidental)	28¾	51	Thrush	ditto	86	Other Malformations	ditto
16	Dropsy	26	52	Want of Breast-milk	ditto	87	Poison (Accidental)	ditto
17	Fever	24¾	53	Pericarditis	ditto	88	Snake Bite	ditto
18	Liver Disease	ditto	54	Gastritis	ditto	89	Chicken-pox	¾
19	Enteritis	19¾	55	Scarlatina	2¾	90	Measles	ditto
20	Burns and Scalds	ditto	56	Uterus Disease	ditto	91	Purpura and Scurvy	ditto
21	Dysentery	18	57	Arthritis	2¼	92	Worms	ditto
22	Croup	17¼	58	Wounds, Cuts, &c. (Accidental)	ditto	93	Insanity	ditto
23	Hydrocephalus	16¾				94	Stricture of Intestine	ditto
24	Premature Birth	16¼	59	Nephritis	2	95	Stone, Gravel	ditto
25	Childbirth	16	60	Ostitis, Periostitis	ditto	96	Joint Disease	ditto
26	Teething	15¾	61	Hanging (Suicidal)	ditto	97	Spina Bifida	ditto
27	Kidney Disease	13¾	62	Metria	1¾	98	Other Dietic Diseases	¾
28	Pleurisy	12¾	63	Cholera	ditto	99	Sunstroke	ditto
29	Nephria	ditto	64	Other Zymotic Diseases	ditto	100	Chorea	ditto
30	Congestion of the Lungs. Pulmonary Apoplexy	12¾	65	Privation	ditto	101	Fistula	ditto
			66	Diabetes	ditto	102	Ischuria	ditto
31	Catarrh	11¾	67	Phlegmon, Whitlow	ditto	103	Ovarian Dropsy	ditto
32	Diphtheria	11¼	68	Cuts, Stabs, (Suicidal)	ditto	104	Skin Disease	ditto
33	Lung Disease	10¾	69	Drowning (Suicidal)	ditto	105	Paramenia	ditto
34	Asthma	10¾	70	Quinsy	1¾	106	Prolapsus Uteri	ditto
35	Rheumatism	9¼	71	Delirium Tremens	ditto	107	Gun-shot Wounds (Suicidal)	ditto
36	Epilepsy	8¾	72	Other Diathetic Diseases	ditto	108	Others (Suicidal)	ditto

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HOBARTON REGISTRATION DISTRICT.

Population.

Though the Meteorological data collected in Hobarton may generally be accepted as a standard for that of the whole Island of Tasmania, yet there are local differences in other parts of the Colony of considerable importance, and the death-rate of the Hobarton Registration District may alone fairly be compared with its meteorological phenomena. At the Census of 1870 the total population of the Hobarton Registration District (which includes not only the City proper, but its rural environs, stretching about eleven miles to the north and ten miles to the south, though a narrow strip of little more than two miles in width, from the shore of the tidal salt-water river Derwent on the east, to the slopes of the spurs of the great mountain tier, crowned by Mount Wellington, upwards of 4000 feet high, on the west), was 25,004, being an increase of only 231 individuals over the Census of 1861. The urban population being 19,092, the rural 5912. In the City portion there were 357 persons less than in 1861. The relative proportion of the sexes and ages in the City only was as follows:—

Ages.	*Males.*	*Females.*	Total.
Under one year	285	263	548
1 to 2 ditto	238	231	469
2 to 5 ditto.....	759	818	1577
5 to 10 ditto.....	1373	1428	2801
10 to 12 ditto.....	527	539	1066
12 to 15 ditto.....	759	839	1598
	3941	4118	8059

A total of 8059 under 15 years old, with a majority of 177 females, but all upwards of two years old, the males being in excess under that age. From 15 years old upwards it will be seen in the following enumeration that females were more numerous than males up to 50 years old by 1277, and on the whole by 841, the males being more numerous than females after the age of 50:—

Ages.	*Males.*	*Females.*	Total.	
15 to 20.....	785	1104	1889	
20 to 30	966	1589	2555	
30 to 40	880	1210	2090	
40 to 50	970	975	1945	
	3601	4878	8479	1277 plus females.
50 to 60	819	588	1407	
60 to 70	459	303	762	
70 to 80	185	146	331	
80 to 90	28	22	50	
90 and above	4	0	4	
	1495	1059	2554	436 plus males.

The males of all ages in the City being 9037, the females 10,055: total 19,092, with a preponderance of 1018 females on the whole. The population of both sexes under 20 years old being 9948, and of all above 20 years old only 9144.

In the Registration District of Hobarton it must be taken into consideration that the most of the destitute, criminal, sick, aged and infirm, of the rural districts of the Island at large are collected; the principal Hospital of the Island being in Hobart City, together with male and female Gaols, male and female Invalid Asylums, and the Queen's Asylum for Orphan and Destitute Children, all within the registration district. Moreover, country people from other registration districts where medical assistance is wanting, or very distant, flock into the city for the benefit of more extended medical care. Hobarton is also annually becoming more and more a sanatorium for invalids from the other Australasian Colonies and India. From these visitors, and the vessels in port, the mortality is abnormally augmented considerably.

No city could be more advantageously situated on sanitary grounds, but man's care has so far done little to obviate those hygienic drawbacks which the concentration of a city population will always produce, whatever may be the climatic and local advantages, unless special care be taken. The ozone table shows how pure the air is generally.

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Of records of this kind I only know one other place in the world, of which we have ozone returns, which can compete with Tasmania for aërial purity,—that is Madeira; and the registers for it available are not nearly so extensive as for Tasmania. The city is about two miles in length and a little less in breadth, so that the population cannot be considered dense; in fact a great proportion of the houses stand isolated in their own grounds with gardens around. By the Census of 1861 there were, on the population of the whole Island, 5·12 persons to every inhabited house; the Census of 1870 includes stores with houses, so that a similar calculation for that year cannot be made; but the houses in Hobarton have increased in the nine years' interval more than the inhabitants.

Marriage and Birth Rates

in the Hobarton Registration District differed proportionately so little from that of the Island at large, as not to require particular enumeration.

Deaths.

In Table E the deaths occurring in every month of the 15 years is given, with the annual and monthly totals, and means. It will be there seen that 1860 had the highest death-rate, which was owing to bowel complaints in the first three months, and to an epidemic of influenza in July and subsequent months, the latter of which was particularly fatal to aged and infirm persons. Of the 114 deaths in July 49 were above 60 years old, and only 21 under 20 years old. During that epidemic calms were predominant, what little aërial movement there was were northerly winds with little ozone, as is usually the case in this disease. With winds prevailing from the opposite points of the compass and laden with an excess of ozone, acute catarrh, bronchitis, pneumonia, &c. usually occur—and are too often confounded with influenza by non-medical people, though even some medical practitioners do not discriminate them accurately. July, 1864, gave an apposite illustration of the effects of excess of ozone accompanying high southerly winds; inflammatory affections of the organs of respiration causing the excessive death-rate of that month, though so thoroughly neutralising miasmatic influences that not a single death occurred in the Zymotic class of diseases. 1858 was the next most fatal year to life, owing to an epidemic of diarrhœa and dysentery in the first four months of the year, which was terribly fatal to young children—and to the abnormal character of the weather in August. It was the wettest month in the records, with high winds, great variations of temperature, high atmospheric pressure; deaths of children from diseases of the brain and organs of respiration were unusually numerous. 1869 had the smallest number of deaths out of the 15 years, and with a remarkable uniformity for each month, only one month of the twelve—November—having a trifling excess of deaths over the 15 years' average. It must, however, be observed that all the last seven years in the list have, with two exceptions, been less fatal to life than the previous eight. The average death-rate of the eight is 585¼, while the mean of the last seven is only 515¼. Though the total population is only a trifle more in the latter than in the former period, yet the constituent elements have so changed that, according to the ordinary laws of mortality, there ought to have been a greater, not a smaller, number of deaths in the last seven years. The principal, though not the only share of this improvement, must be owing to more favourable climatic conditions. The death-rate of the last seven years has exhibited a decline in the whole Colony, as well as in the Hobarton Registration District, though not to the same comparative extent. A share of the improvement in Hobart City can distinctly be traced to the improved water supply within the latter period; the town of Launceston, also, has benefitted in the same way from the same cause. The Table shows March to have numerically the highest death-rate, though, in proportion to the number of its days, February is really the most fatal to life. July, next in number to March, would stand much lower in the scale were it not for the very exceptional years of 1860, 1864, 1867, 1868, the cause of which is explained in the notes attached to them in the Table. November and May are the months of smallest mortality. In neither of these months has there been in any one year any remarkable excess of mortality above the 15 years' average. November is a warmer, windier, and wetter month than May; but the latter is generally a much more agreeable month, though lacking the charms of spring verdure and flowers of the former. The four hot summer months of Tasmania—December, January, February, March,—with mean temperatures for 30 years respectively of 61·19, 62·67, 62·11, and 59·92 degrees, have the highest consecutive mortality, averaging 50¼ each. The four months of lowest temperature mean—May, June, July, August,—respectively 50·62, 47·09, 46·07, 48·47, averaging 46¼ deaths each. In England the death-rate is greatest in the coldest months. Though the mean daily range of temperature in Tasmania is very high, it does not appear to be so inimical to health and life as such extensive alternations are considered to be in England. Sudden and extensive variations in atmospheric pressure seem to be the most influential in increasing the death-rate, and particularly with very aged individuals, or persons suffering from chronic or debilitating diseases. Aërial movement is generally moderate and persistent, and auspicious to health and life. Hot winds from the north and north-west, coming from the Australian Continent, though much mitigated by their passage over Bass' Straits, are the winds least favourable to health and comfort, conveying the least ozone, and depressing the barometer. They are, however, not very frequent in number or of long duration, and usually followed by refreshing thunder showers. Sea-breezes, as the south-east winds are specially denominated, are the great

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health promoters in this part of the Island, being laden with ozone, or oxygen in its highest state of purity and efficiency. The rainfall of Tasmania, or rather I should say of Hobart Town, for it varies much in different localities, is moderate in amount, and very fairly distributed throughout the year. It will be seen from the Rain Table that the month of the greatest average rainfall, November, is that of the smallest average mortality. When the rain falls in showers—frequent, copious, and quick enough to wash the air, and flush the surface drains, sewers, &c.—it is the most beneficial to health. As yet artificial means of removing decomposing organic matters are lamentably deficient. Dividing the rain table into cycles of seven years, it is found that in the first seven years, 1841–7, the total rainfall was 130·33 inches, the mean being 18·62; in the second seven, 1848–54, the total was 158·33 inches, the mean 22·62 inches; in the third seven, 1855–61, the total was 163·74 inches, the mean 23·39 inches; in the fourth seven the total was 174·47 inches, the mean 24·92 inches; the last two years in the table the total was 51·40 inches, the mean 25·70. It would thus appear that the general impression that the climate has become drier is not correct, but that the reverse is the fact. It is, however, to be noted that last year, 1871, which is not included in the compiled 30 years' tables, had much below the average rainfall, *i.e.*, only 18·49 inches, or a little less than the mean of the first seven of the cycles I have particularised. In the five years' Meteorological Table, "Rainfall and Evaporation," it will be seen how great a proportion of the precipitated rain is lost by evaporation. On economic grounds this disparity requires very serious consideration. It must, however, be observed, that on the summit and plateau of Mount Wellington the quantity of rain, or its equivalent in snow, that is deposited greatly exceeds what falls in Hobarton. From an experiment conducted by the Engineer of the Waterworks and myself, conjointly, for some months, many years ago, we found the rain-gauge on the mountain to yield nearly three times as much as it did in the city. I think it was Sir John Herschell who remarked that at elevations of about 4000 feet the rainfall was always greater than at either lower or higher altitudes. Most of the lakes of Tasmania, the great natural water reservoirs of the Island, and origin of our rivers, are about this altitude. Engineering skill could easily retain a greater quantity of water in the lakes than they habitually do at present, and so provide for the dry months and seasons, and prevent, as is so often the case, many of the rivers becoming a mere chain of stagnant water-holes for a considerable portion of the year. Both health and agriculture would, by this improvement, be greatly benefited. The proposal to conserve the rain falling on Mount Wellington, by making a reservoir or artificial lake there, lately proposed to the City Council, is deserving of the most attentive consideration. There are few better "gathering grounds" for pure water in the world. Next to pure air, nothing promotes the health of a community more than an abundant supply of pure water. Hobarton sanitary statistics, as well as those of Launceston, have furnished undoubted proofs of this from the improvement of the quantity and quality of the water supply for some years past. Bowel complaints in the four years, 1857, 1858, 1859, 1860, caused 206 deaths in the Hobarton Registration District, or a yearly average of 51¼. In the four years, 1868, 1869, 1870, 1871, they have caused only 146 deaths, or annual average of 36½. There has been, I believe, much the same proportionate diminution of deaths from bowel complaints in Launceston since the improved water supply came into operation there. The rural districts, however, have not enjoyed a similar lessening of the death-rate from those diseases.

Table F. gives a detailed account of the ages and causes of death in the Hobarton Registration District for every month of the year 1870. I have chosen that year as it was the census year, and the total number of deaths being nearly the average of the last four years, and the diseases of the ordinary character. The weather was not peculiarly propitious, but still no epidemic disease prevailed, and all the months except January and August had a death-rate below the average in the 15 years, Table E. The year's mean of the barometer was somewhat above the 30 years' average; and the maximum of the year 30·610, and the minimum 28·852, give an extreme range of atmospheric pressure of 1·758 inches, which, with the exception of 1868, is the greatest recorded since 1861. Temperature mean, 55·95 degrees, was + 1·23 above the 30 years' average. The extremes of the year were 99 degrees in January, 31 in July. The greatest range in any month was 54 degrees in January, which month had by far the largest number of deaths. The year's mean for the daily range of temperature was but little above the mean of the 30 years, being 18·53 against 17·91. The greatest range in any twenty-four hours was 41 degrees in January, and the next 38 in February. Solar-intensity mean 92·58 degrees, is only − ·81 less than the average. The maxima were high in January and February, 138 and 130·5 degrees respectively. Terrestrial-radiation mean 42·46 degrees, was − ·55 below the average. The rainfall was great, 27·53 inches, which is + 4·82 above the mean. November, January, and April were the wettest months, the two latter being quite abnormal in that respect. There were 133 days on which rain fell, being −6·88 below the average. Ozone was 6·55, only being − ·69 below the average. Wind force was 704·13 lbs., being + 3·68 lbs. above the average. January had the most,—92·63 lbs.; April the least,—21·32 lbs. The population of the district being 25,004, and 1870 having 500 total deaths, the death-rate was exactly 20 per 1000; but then the extra urban portion of the inhabitants was nearly 6000. Nevertheless, as about 1000 of these were congregated in three public establishments, this disturbing influence in the calculation on that account would be greatly modified, as 70 of the deaths -principally very aged invalids from all parts of the Colony—occurred in two of the institutions. 45 more out of the 500 deaths were known to be of persons not belonging to the Registration District;

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so that if we consider the actual share of the district to be 400, and the death-rate 16 per 1000, we shall be very near the truth. This is a very small rate indeed for a town population. In England the death-rate for all towns of upwards of 10,000 inhabitants is about 25 per 1000 per annum. Besides the 70 deaths in the Invalid Establishments there were 112 in the Public Hospital. I opine that no town in England of a similar amount of population would have so large a proportion of the deaths occurring in Charitable Institutions. Under 5 years of age there were 123 deaths, which is nearly one-fourth of the total deaths at all ages. The population living at this age by the Census of 1870 being 2594, the death-rate would be only 4¾ per cent., which though, as is always the case in towns, much above the general rate at the same age for the whole Island, is yet considerably less than the general rate of 6¾ for all England and Wales. Out of the total 500 deaths, 175 were at and above 60 years old. The population of that age at the Census being 1147, the death-rate would be only about 15 per cent., while the rate for all England and Wales, on a mean of 29 years, is about 18¾. After the elaborate examination I made of the causes of death in all Tasmania, in contrast with the deaths from the same diseases in all England and Wales, I need not repeat a similar comparison for Hobarton; indeed I could not find any town that I know of in England that could fairly be contrasted with it. The zymotic proportion of deaths in the Hobarton table is only 61 out of 500 deaths from all causes, or less than one-eighth; so that Hobarton Registration District is far more favourable in this respect than that of the whole Island. This is a result at variance with the usual rule for towns, and I attribute it to the greater prevalence of the ozone-laden southerly sea-breezes in Hobarton than in the interior, or northern side of the Island. I have already referred to the small number of deaths from bowel complaints in Hobarton, which I believe to be mainly consequent on the improved water supply. Were another hygienic improvement, second only in importance to the former, carried into effect,—that is, the perfect and speedy removal of all decomposing animal and vegetable refuse far away from our habitations,—the deaths from these diseases, which even now form half the deaths in the zymotic class, would be still further reduced. The only other disease in the zymotic class I need to comment upon is typhoid fever, which I have tabulated distinct from other fevers. In the list of deaths from all causes for the whole Island, in Table D, no such distinction is made; and I think it important that it should be so, as this is a disease of an entirely preventable nature by hygienic management on the part of the Government or the Corporate Council of the City. This very fatal disease is emphatically called filth-fever, as it arises from putrefying animal dejecta. Of late years this disease and its causes have been much studied by sanitarians. The death of the Prince Consort of our beloved Sovereign from this disease, and the narrow escape their son, the heir to the Crown of England, has so recently had from his father's fate, shows that hygienic neglect even in the highest households may be committed, but cannot be so with impunity. Animal excreta kept in middens, and privy cesspools, in the neighbourhood of habitations, and saturating the adjacent soil, and often percolating into wells and other sources of water supply, together with the gaseous emanations therefrom, is the fertile source of this disease in England, not merely in crowded cities and towns, but often in small rural villages, as the investigations of the medical officers of the Privy Council have so often brought to light. Privy cesspools, rarely emptied, is the usual provision for receiving human fæces in Hobarton. In many instances human dejecta is passed direct into the sewers, which, from their imperfect character, are merely elongated cesspools, and scarcely cleansed of their disgusting contents by the heaviest rainfalls. All of them ultimately terminate in the harbour, and will in time tend to pollute what is naturally one of the healthiest places for shipping in the world. The boat-harbour, the city rivulet, and other places, often give evidence of their noisome condition to the olfactory organs of passers-by. The mischief of such-like causes at Sydney, in New South Wales, is already a source of dread to our vessels of war, and has been noticed in the Navy Medical Reports. Animal excreta ought to be removed in an unoffensive condition and manner from every town and habitation during every night, and this far richer guano than any imported used to fertilise our fields and gardens, instead of being allowed to go to waste and poison the air and the waters of so admirably situated a city as this is. If such a town as Lancaster, in England, with a municipal population of about 16,000 persons, can well and profitably manage to do this, surely Hobarton could do the same. The Twelfth Report of the Medical Officer of the Privy Council (1869) contains proof of this in the elaborate "Report" of Dr. Buchanan, "on the Dry-earth System of dealing with Excrement." In another Report of a similar nature, in the same volume, by Drs. Buchanan and Netten Radcliffe, the reporters say, "That the propagation of certain epidemic diseases, especially cholera, enteric fever (typhoid), and diarrhœa, among communities, is the result of excremental pollution of air and water, is one of the best established facts of sanitary medicine."

Dr. Buchanan's summary as to the advantages of the Dry-earth System is:—

(1.) "The earth-closet, intelligently managed, furnishes a means of disposing of excrement without nuisance, and apparently without detriment to health. (2.) In communities the earth-closet system requires to be managed by the authority of the place, and will pay, at least, the expenses of its management. (3.) In the poorer class of houses, where supervision of any closet arrangements is indispensable, the adoption of the earth system offers especial advantages. (4.) The earth system of excrement removal does not supersede the necessity for an independent means of removing slops, rain water, and soil water. (5.) The limits of application of the earth system in the future cannot be stated. In existing towns, favourably arranged for access to the

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closets, the system might at once be applied to populations of 10,000 persons. (6.) As compared with the water-closet, the earth-closet has these advantages:—It is cheaper in original cost; it requires less repair; it is not injured by frost; it is not damaged by improper substances being thrown down it; and it very greatly reduces the quantity of water required by each household. (7.) As regards the application of excrement to the land, the advantages of the earth system are these: the whole agricultural value of the excrement is retained; the resulting manure is in a state in which it can be kept, carried about, and applied to the crops with facility; there is no need for restricting its use to any particular area, nor for using it at times when agriculturally it is worthless; and it can be applied with advantage to a very great variety, if not to all, crops and soils. After the disposal of excrement by earth, irrigation will continue to have its value as a means of extracting from the refuse water of a place whatever agricultural value it may possess for the benefit of such crops and such places as can advantageously be subjected to the process. (8.) These conclusions have no reference to the disposal of trade or manufacturing refuse, which it is assumed ought to be dealt with, as belonging to the business in which it is produced, by the people who produce it, and not to come within the province of local authorities to provide for."

In the Hobarton public establishments for Paupers and Criminals, the frequent removal of the excrement (which is received into wooden vessels, not retained in cesspools), and its application as manure is adopted. But it is not mixed with dry earth, or deodorised, and the carts removing it by night from the Male Gaol, and the Hospital, to the Queen's Asylum farm, often create a great nuisance; and the overflow from the carts can frequently be traced for days, both by sight and smell, in the streets they pass through. The system is the same at the Queen's Asylum too, and its defects are often palpable to the organs of smell, though the arrangement is a vast improvement on the old cesspool system. The latter Institution affords such a remarkable example of the eradication of typhoid fever by a better system of excrement disposal, that it is worthy of relation. Previous to the transfer of the charity from the Imperial to the Colonial authorities, all the cloacæ were within the buildings, and the excrement dropped into sewers which passed beneath the buildings. These sewers also conveyed all the slops and rainfall, and the overflow from the water reservoir. In a cellar, beneath the girls' dormitory staircase, an open grating communicated with the drains, and gratings were numerous adjacent to the buildings in many places. When the Royal Commissioners of 1859 visited the Institution, they found 18 girls, six to fourteen years old, then under treatment for a severe form of typhoid fever. In fact every death from any cause for years before had always exhibited a typhoid type. Since the cloacæ were established away from the dwellings, and their contents no longer passed into the sewers, now upwards of ten years, not a single case of typhoid fever has occurred, or the typhoid type been recognised in deaths from any other disease. For the 19 years previous to 1860, there was an annual average death-rate of nearly 16 per annum. In some years the Asylum inmates were more than decimated, above one-eighth of the average daily strength of children dying within the year. For the last ten years the mortality has not averaged 1½ per annum, *i.e.*, 1·30. Thus from this source alone there has been a reduction of the Hobarton Registration District deaths of 14 per annum, or, taking the whole twelve years it has been under the management of the Tasmanian authorities, a saving of 149 children's lives. There have, however, been other important improvements besides that already mentioned—in the dietary, new infant department, &c. &c.—but the whole did not come into operation until 1862. Though five deaths from typhoid fever in 1870 in the Hobarton Registration District do not seem many, yet as there were only three others from any other kind of fever, it is a very excessive share of the fever deaths. The eight deaths from fevers of all kinds in the Hobarton Registration District, out of 25,004 inhabitants, is one death to 3125 living, and differs little in proportion to population from that of the whole Island, where, in the same year of 1870, the deaths registered from fever were 26 in 99,328, or one death to 3820. For towns usually the disproportion is much greater against them. The conveyance of disease by germs in the dust of towns, &c. has only of late received much attention. But Tyndall and others have exhibited dust floating in the atmosphere in as repulsive a manner as Hassall and others have the water drank in London and elsewhere. In a climate like this, where from the potency of the sun's rays, and almost constant aërial movement, evaporation is so great, the desiccation of organic substances and their reduction into fine dust is very constant. This dust is not only breathed, but it commingles with our food, and is absorbed by our water reservoirs, tanks, and casks; and the slightest observation shows how quickly water so impregnated becomes offensive to smell and taste, and abounds with animalculæ. Some persons believe that the heat in these Colonies is destructive to organic life in the dust in the atmosphere, but direct experiment shows that much organic life survives the heat of boiling water; and it is thought necessary for the disinfection of clothing, bedding, &c. to subject it to a dry heat of not less than 240 degrees. In England the pollution of wells and streams by percolation from cesspools and sewers, and burial grounds, is common. In Hobarton the danger from percolation is small, as wells form no part of the potable water supply of the inhabitants. By sight alone any one can perceive how much the dust of our streets is composed of animal ordure, and the necessity therefore for most careful watering and scavenging to prevent us from breathing, eating, and drinking much offensive and dangerous substances.—The next Class of diseases, in Table F, is the "Cachectic or Constitutional." The number of deaths is 83, or a little more than one-fifth from all causes, and is in much the same proportion as those in the whole Island bear to those from all diseases. *Cancer*, 25 deaths, is nearly half of those from the same disease in 1870 for the whole Colony. This might be expected, as the deaths were mainly in the Hospital and Invalid Asylums. Three deaths from *Dropsy*, all above 60 years old, on the other hand,

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were much below the proportion for the whole Island. *Phthisis*, 43 deaths, were nearly half of the 90 for the whole of Tasmania.—The 3rd, or "Local Class of Diseases," had 243 deaths, which is a somewhat greater proportion than for the whole Island. "Diseases of the Nervous System," 83 deaths, had much the largest number of any of the 8 Orders of this Class, and much beyond its share in proportion to population, but then a large number of the deaths in this Order are of old persons from apoplexy and paralysis. The next Order, "Diseases of the Organs of Circulation," had 41 deaths, nearly all from *Heart Disease*, and all but 3 above 40 years old. This too is large in proportion to those for the whole Island. The 3rd Order, "Diseases of the Organs of Respiration," had 62 deaths, principally from *Bronchitis* and *Pneumonia*: the latter being very few in proportion to those for the whole of Tasmania—not one-fifth—while the population is about one-fourth. On the other hand, *Bronchitis* was not much less than one-half. The 4th Order, "Diseases of the Digestive Organs," had 28, to 80 for the whole of Tasmania. The 5th Order, "Diseases of the Urinary Organs," had an excessive share of the general mortality, 24 out of 44. The next Order had not any deaths, and the whole Island but 3. The 7th Order had 2 out of 3 for all Tasmania. The 8th and last Order, "Diseases of the Integumentary System," had the whole number, 3, for all the Colony.—The 4th Class, "Developmental Diseases," had in its 1st Order, "Children," only 5 deaths, to 29 for the whole Island. The 2nd Order, "Adults," all diseases of females, mostly connected with parturition, had 8 deaths, being within one of the half for the whole Colony. The 3rd Order, "Old Age," had 50 deaths, to 151 for all Tasmania. The 4th Order, "Diseases of Nutrition," is constituted by *Atrophy and Debility*, from which there were 23 deaths out of 55 for all the Island.—The 5th Class, "Violence, &c." had 25 deaths, which is less than one-fourth of those in all the Colony. Altogether the deaths in 1870 for the Hobarton Registration District was one in 50 of its population, while that for all Tasmania was only one in about 71.

An instructive comparison may be made by contrasting the deaths in the Hobarton Registration District for 1870 with the same for 1859, which year had the smallest number of deaths of the first four years of the 15 in Table E. Taking the mean of the Census enumerations for 1857 and 1861 for Hobarton Registration District as the population for 1859, it is not much less (24,613) numerically than for 1870, *i.e*, 25,004; but the proportions at various ages are very different, and much less favourable to the death-rate of the latter year. For instance, in 1859 there were at 60 years old and upwards 780 living persons, while in 1870 there were 1147. Again, below 21 years of age there were in 1859 living 11,753 individuals, while in 1870 there were 13,025 below 20 years old. 572 deaths out of 24,613 living persons in 1859 would be one death to about 43, or about 23 per 1000. In 1870 the deaths were almost exactly one in 50, or 20 per 1000. It is thus evident that the death-rate of Hobarton Registration District has diminished in eleven years by 3 per 1000, while the death-rate for the whole Island from 1861 to 1871 diminished in the same proportion. (See Table C.) This reduction of the death-rate cannot be attributed to any single cause; for while the meteorological phenomena were perhaps on the whole more favourable in 1870—no epidemic diseases prevailing, and in 1859 deaths from scarlatina and whooping-cough, and a greater number of deaths from diphtheria, croup, dysentery, diarrhœa, and fever, than in 1870—yet on the other hand the population had a greater share of the young and the very old, and therefore ordinarily liable to a greater death-rate. No doubt the city improvements, in better water supply and other sanitary measures, contributed considerably to this gratifying diminution of the death-rate; but I believe that it was mainly owing to the increase of the native-born population over that imported, and the dying off, and emigration from the Island, of imported adults of originally depraved constitutions. If my conjecture be right, the promise of health and long life to those born in Tasmania has up to this time been underrated, and the climatic character of this beautiful Island must gain, by the researches and investigations I have made, a still higher position than has ever yet been awarded to it.

NOTE.—Since the foregoing was written the Registrar-General of Victoria (W. H. Archer, Esq.,) has kindly furnished me with the number of deaths from Phthisis in all the Colony of Victoria in the Census year 1871. There were 822. The total population by the Census on the 2nd of April, 1871, was 731,528, but the number by estimation had increased to 736,208 on the 30th of June, 1871. The death-rate from Consumption for that year would therefore be one in 895½ of the average population of the year, or about 1·11 per 1000. In the previous four years, only 1868 had a smaller death-rate. The Official Statistics therefore refute the assertion that Consumption, in proportion to population, is annually on the increase in Victoria: the facts proving the reverse to be the truth.—E. S. H.

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TABLES.

A. POPULATION.

B. MARRIAGES AND BIRTHS, 1856—1871.

C. DEATHS REGISTERED, 1857—1871.

D. DEATHS REGISTERED 1868—1871, SHOWING AGES AND CAUSES OF DEATH.

E. DEATHS, MONTHLY, IN HOBARTON REGISTRATION DISTRICT, 1857—1871.

F. DEATHS IN THE HOBARTON REGISTRATION DISTRICT IN 1870.

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TABLE A.

POPULATION of Tasmania.

CENSUS, 1857, MARCH 31ST.				CENSUS, 1861, APRIL 7TH.					CENSUS, 1870, FEBRUARY 7TH.			
Ages.	*Males.*	*Females.*	*Total.*	*Ages.*	*Males.*	*Females.*	*Total.*		*Males.*	*Females.*	*Total.*	
								Total under 5—				Total under 5—
				Under 1	1612	1505	3117	M.. 7639	1484	1403	2887	M.. 7185 14,302
				Above 1 to 5	6027	5855	11,882	F. . 7360 14,999	5701	5714	11,415	F... 7117
				5 to 10	5545	5563	11,108	— 11,108	7426	7166	14,592	14,592
				10 to 15	4182	4058	8240	M.. 7566	6758	6791	13,549	M.. 11,053
Under 21	17,460	17,769	35,229	15 to 20	3384	3918	7302	F... 7976 15,542	4295	4553	8848	F... 11,344 22,397
								Total under 20... 41,649				Total under 20... 51,291
				20 to 30	5965	7157	13,122	M.. 13,941	5664	6567	12,231	M.. 10,862
				30 to 40	7976	5644	13,620	F... 12,801 26,742	5198	5488	10,686	F... 12,055 22,917
				40 to 50	7322	3769	11,091	M.. 11,826	6280	4244	10,524	M.. 11,569
21 to 60	26,846	16,482	43,328	50 to 60	4504	1825	6329	F... 5594 17,420	5289	2707	7996	F... 6951 18,520
				60 to 70	2270	822	3092		3225	1259	4484	
60 and above	1610	635	2245	70 to 80	631	226	857	M.. 3076 4166	1262	494	1756	M.. 4758 6600
	45,916	34,886		80 to 90	154	39	193	F... 1090	235	79	314	F... 1842
Military and	men, children	women, men	690	90 to 100 and above.	21	3	24		36	10	46	
			81,492		49,593	40,384	89,977	89,977	52,853	46,475	99,328	Total 99,328
				Married	15,893	15,616	31,509	—	15,665	15,498	31,163	
				Single.....	33,700	24,768	58,468	—	37,188	30,977	68,165	

		Born in Tasmania	59,119
		Great Britain and Ireland ..	37,145 99,328
		All other Countries	3064
Under 20 years old	41,649	—	51,291
From 20 to 50 years old	37,833	—	33,441
50 and above	10,495	—	14,596
	89,977		99,328

TABLE B.

MARRIAGES and Births in all TASMANIA *for the* 16 *years,* 1856 *to* 1871 *inclusive.*

Years.	*Marriages.*	*Births.*		
		Males.	Females.	TOTAL.
1856	933	1547	1409	2956
1857	897	1660	1586	3246
1858	779	1604	1534	3138
1859	706	1640	1604	3244
1860	689	1643	1595	3238
1861	717	1681	1526	3207
1862	636	1660	1489	3149
1863	698	1566	1432	2998
1864	698	1531	1500	3031
1865	591	1569	1500	3069
1866	571	1432	1373	2805
1867	597	1505	1466	2971
1868	654	1528	1462	2990
1869	651	1445	1414	2859
1870	670	1615	1439	3054
1871	597	1585	1468	3053
		25,211	23,797	49,008
Mean of 16 years.....		$1575\frac{11}{16}$	$1487\frac{5}{16}$	3063

105½ boys born to every 100 girls on 16 years' average.

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TABLE C.

DEATHS registered in all TASMANIA *for the Fifteen Years* 1857 *to* 1871 *inclusive, abstracted from the Official Statistics.*

Years.	*Under 1 Year Old.*	*From 1 to 2.*	*From 2 to 3.*	*From 3 to 4.*	*From 4 to 5.*	TOTAL UNDER 5 YEARS OLD.	*From 5 to 10.*	*From 10 to 20.*	*From 20 to 30.*	*From 30 to 40.*	*From 40 to 50.*	*From 50 to 60.*	*From 60 to 70.*	*From 70 to 80.*	*From 80 to 90.*	*From 90 to 100.*	*100 and above.*	*Unknown.*	TOTAL.
1857.....	360	72	47	14	11	504	43	39	82	187	172	160	110	62	25	9	0	25	1418
1858.....	440	139	51	34	28	692	32	54	96	163	148	142	112	63	31	7	2	20	1562
1859.....	363	105	48	33	23	572	44	55	101	147	148	132	108	56	30	3	0	14	1410
1860.....	423	125	40	28	32	648	42	74	124	173	190	187	152	89	30	10	1	29	1749*
1861.....	323	124	53	27	40	567	67	62	105	150	166	146	105	60	27	3	2	17	1477
1862.....	306	109	37	17	22	491	41	47	90	149	144	159	120	75	25	6	0	15	1362
1863.....	306	89	31	34	29	489	60	61	72	126	159	156	152	90	40	4	2	7	1418
1864.....	333	83	48	13	30	507	62	53	83	106	186	138	140	94	46	7	1	10	1433
1865.....	257	54	33	9	20	373	50	65	75	90	145	133	162	111	41	5	1	12	1263†
1866.....	264	72	29	12	14	391	37	85	76	103	123	147	174	125	49	3	2	12	1327
1867.....	267	100	46	21	16	450	62	66	77	110	177	137	159	124	39	12	1	4	1418
1868.....	351	78	35	19	18	501	41	65	85	85	138	171	185	121	54	10	0	8	1464
1869.....	289	56	26	13	14	398	44	68	66	87	151	147	168	141	44	12	1	8	1336
1870.....	298	46	26	20	19	409	45	63	76	81	121	177	185	174	59	11	0	3	1404
1871.....	263	44	21	18	8	354	27	78	63	75	125	166	192	183	62	7	0	3	1355
Total 15 years	4843	1296	571	312	324	7346	697	935	1291	1832	2293	2298	2224	1568	602	109	13	187	21,395
Mean 15 years	322 $\frac{13}{15}$	86 $\frac{6}{15}$	38 $\frac{1}{15}$	20 $\frac{13}{15}$	21 $\frac{9}{15}$	489 $\frac{11}{15}$	46 $\frac{7}{15}$	62 $\frac{4}{15}$	86 $\frac{1}{15}$	122 $\frac{3}{15}$	152 $\frac{13}{15}$	153 $\frac{3}{15}$	148 $\frac{4}{15}$	104 $\frac{4}{15}$	40 $\frac{3}{15}$	7 $\frac{4}{15}$	$\frac{13}{15}$	12 $\frac{7}{15}$	1426 $\frac{6}{15}$

Mean of first Seven years, 1857–1863 ..... 1485½

Mean of last Seven years, 1865–1871 ..... 1366½

Census 31st March, 1857, Total Population, 81,492; Death Rate of 1857, one in 57·48, or about 17½ per 1000.

Census 7th April, 1861, Ditto, 89,977; Ditto, 1861, ditto 61·00, ditto 16½ ditto.

Census 7th February, 1870, Ditto. 99,828; Ditto, { 1869, ditto 75·00, ditto 13½ ditto. { 1870, ditto 71·22, ditto 14 ditto.

Estimate of Population on 30th June, 1871, 101,869; Death-rate of 1871, one in 75·18, or about 13½ per 1000.

* Maximum. † Minimum.

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TABLE D.

DEATHS of both Sexes registered in TASMANIA *during the Four Years* 1868-71, *showing the Ages and Causes of Death.*

Classes.	*Orders, Diseases, &c.*	*Under 5 Years.*	5 *to* 10.	10 *to* 15.	15 *to* 20.	20 *to* 30.	30 *to* 40.	40 *to* 50.	50 *to* 60.	60 *to* 70.	70 *to* 80.	80 *to* 90.	90 *to* 100.	100 *to* 110.	*Ages not specified.*	TOTAL.	*Mean of the Four Years.*	1868.	1869.	1870.	1871.
CLASS 1.—MORBI ZYMOTICI. Diseases that are either epidemic, endemic, or communicable; induced by some specific body, or by the want or by the bad quality of the food.	ORDER 1.—*Miasmatic Diseases.*																				
	Chicken-pox, &c.	2	..	..	.	..	..	..	..	..	..	..	..	..	..	2	½	..	1	..	1
	Measles	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	½	..	..	..	2
	Scarlatina	6	3	1	..	..	..	..	..	..	..	..	..	..	..	10	2½	..	3	..	7
	Diphtheria	18	17	6	2	1	..	..	..	1	..	..	..	..	..	45	11¼	11	14	15	5
	Quinsy	..	3	2	..	..	1	..	..	..	..	..	..	..	..	6	1½	2	2	2	..
	Croup	59	10	..	..	..	..	..	..	..	..	..	..	..	..	69	17¼	28	8	22	11
	Whooping-cough	115	2	..	1	1	..	..	..	..	..	..	..	..	..	119	29¾	78	41	..	..
	Typhus and Infantile Fever, Typhoid, &c.	14	13	20	9	19	6	4	9	4	1	..	..	..	..	99	24¾	32	33	26	8
	Erysipelas	7	2	..	1	1	..	..	3	3	2	..	..	..	..	19	4¾	1	5	5	8
	Metria	..	..	..	..	4	2	1	..	..	..	..	..	..	..	7	1¾	1	1	4	1
	Dysentery	42	..	..	1	1	2	5	3	11	3	4	..	..	..	72	18	19	14	23	16
	Diarrhœa	204	2	2	..	..	3	9	3	13	10	5	..	..	..	251	62¾	61	72	51	67
	Cholera	3	..	..	..	..	..	1	1	2	..	..	..	..	..	7	1¾	2	..	5	..
	Ague	..	..	..	..	..	..	..	..	3	..	..	..	..	..	3	¾	..	1	1	1
	Rheumatism	..	7	5	2	1	5	2	3	9	5	..	..	..	..	39	9¾	10	7	6	16
	Other Zymotic Diseases	1	..	..	..	4	..	..	..	1	1	..	..	..	..	7	1¾	3	..	2	2
	Total Order 1	473	59	36	16	32	19	22	22	47	22	9	..	..	..	757	189¼	248	202	162	145
	ORDER 2.—*Enthetic Diseases.*																				
	Syphilis	3	..	..	..	..	..	..	..	1	..	..	..	..	..	4	1	1	..	2	1
	Gonorrhœa, Stricture of the Uretha	..	..	..	..	..	..	1	4	3	..	3	..	..	..	11	2¾	1	3	2	5
	Total Order 2	3	..	..	..	..	..	1	4	4	..	3	..	..	..	15	3¾	2	3	4	6
	ORDER 3.—*Dietic Diseases.*																				
	Privation	3	1	..	..	..	..	..	1	..	2	..	..	..	..	7	1¾	2	2	2	1
	Want of Breast-milk	11	..	..	..	..	..	..	..	..	..	..	..	..	..	11	2¾	1	2	6	2
	Purpura and Scurvy	1	..	..	1	..	..	..	..	..	..	..	..	..	..	2	½	..	..	2	..
	Alcholism { Delirium Tremens	..	..	..	..	..	2	1	3	..	..	..	..	..	..	6	1½	2	2	..	2
	Alcholism { Intemperance	..	..	..	..	..	1	3	3	3	1	..	..	..	..	11	2¾	1	2	5	3
	Others	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	¼	..	..	1	.
	Total Order 3	15	1	1	1	..	3	4	7	3	3	..	..	..	..	38	9½	6	8	16	8
	ORDER 4.—*Parasitic Diseases.*																				
	Thrush	11	..	..	..	..	..	..	..	..	..	..	..	..	..	11	2¾	1	3	5	2
	Worms, &c.	..	1	..	..	..	..	1	..	..	..	..	..	..	..	2	½	1	..	1	..
	Total Order 4	11	1	..	..	..	..	1	..	..	..	..	..	..	..	13	3¼	2	3	6	2
	TOTAL CLASS I.	502	61	37	17	32	22	28	33	54	25	12	..	..	..	823	205¾	258	216	188	161
CACHECTICI. *Diseases.* organs in which new morbid Sometimes hereditary.	ORDER 1.—*Diathetic Diseases.*																				
	Gout	..	..	..	..	..	1	1	1	1	..	..	..	..	..	4	1	1	3	..	..
	Dropsy	6	..	3	1	4	6	12	22	25	20	5	..	..	..	104	26	22	27	29	26
	Cancer	..	..	1	1	1	13	37	48	48	19	2	..	..	..	170	42½	46	39	43	42
	Tumor	3	..	1	..	2	3	1	4	4	..	..	..	..	..	18	4½	4	5	1	8
	Polypus	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	¼	..	..	1	..
	Mortification	..	..	..	1	..	1	1	5	3	4	..	..	..	..	15	3¾	3	7	..	5
	Others	4	..	..	..	2	..	..	..	..	..	..	..	..	..	6	1½	2	2	..	2
	Total Order 1	13	..	5	3	9	24	52	80	81	44	7	..	..	..	318	79½	78	83	74	83

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CLASS II.—MORBI *Constitutional*

Sporadic diseases, affecting several products are often deposited.

CLASS III.—MORBI MONORGANICI.

Local Diseases.

Sporadic diseases in which the functions of particular organs or systems are disturbed or obliterated, with or without inflammation; sometimes hereditary.

| | | |

DEATHS—*continued.*

Classes.	Orders, Diseases, &c.	Under 5 Years.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Ages not specified.	Total.	Mean of the Four Years.	1868.	1869.	1870.	1871.
Class III.—Morbi Monorganici. *Local Diseases.*	Order 5.—*Diseases of the Urinary Organs.*																				
	Nephritis	1	..	1	..	2	..	1	1	1	1	..	..	..	..	8	2	2	3	2	1
	Ischuria	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	¼	..	..	..	1
	Nephria	..	..	..	1	6	6	12	10	7	8	1	..	..	..	51	12¾	18	15	8	10
	Diabetes	1	1	..	..	1	1	2	..	1	..	..	..	..	..	7	1¾	2	..	3	2
	Stone, Gravel	1	..	..	..	..	..	..	1	..	..	..	..	..	..	2	½	1	..	..	1
	Cystitis	1	..	..	1	..	..	3	5	4	6	..	..	..	..	20	5	4	8	5	3
	Kidney Disease, &c.	1	..	..	..	3	6	8	14	10	13	..	..	..	..	55	13¾	11	8	26	10
	Total Order 5	5	1	1	2	12	13	26	31	23	29	1	..	..	..	144	36	38	34	44	28
	Order 6.—*Diseases of the Organs of Generation.*																				
	Ovarian Dropsy	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	¼	..	1	..	..
	Uterus Disease, &c.	..	..	..	..	1	..	3	4	2	..	..	..	..	..	10	2½	2	3	3	2
	Total Order 6	..	..	1	..	1	..	3	4	2	..	..	..	..	..	11	2¾	2	4	3	2
	Order 7.—*Diseases of the Locomotive System.*																				
	Arthritis	..	3	3	1	1	..	1	..	..	..	..	..	..	..	9	2¼	3	2	1	3
	Ostitis, Periostitis, &c.	1	1	1	1	2	..	..	2	..	..	..	..	..	..	8	2	3	2	2	1
	Joint Disease, &c.	..	..	..	1	..	..	..	1	..	..	..	..	..	..	2	½	1	..	..	1
	Total Order 7	1	4	4	3	3	..	1	3	..	..	..	..	..	..	19	4¾	7	4	3	5
	Order 8.—*Diseases of the Integumentary System.*																				
	Boil, Carbuncle, &c.	..	..	..	..	..	..	..	1	1	2	..	..	..	..	4	1	1	..	2	1
	Phlegmon, Whitlow, &c.	1	..	..	..	..	..	..	2	4	..	..	..	..	..	7	1¾	1	2	1	3
	Ulcer	..	..	..	..	1	..	1	..	..	1	..	..	..	..	3	¾	1	2	..	..
	Skin Disease, &c.	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	¼	1	..	..	..
	Total Order 8	1	..	..	..	1	..	2	3	5	3	..	..	..	..	15	3¾	4	4	3	4
	Total Class III	641	52	50	48	106	143	297	409	419	273	54	1	..	4	2497	624¼	656	578	652	611
Class IV.—Morbi Metamorphici. *Developmental Diseases.* Special Diseases, the incidental result of the formative, reproductive, and nutritive processes.	Order 1.—*Developmental Diseases of Children.*																				
	Premature Birth	65	..	..	..	..	..	..	..	..	..	..	..	..	..	65	16¼	24	8	10	23
	Cyanosis	6	..	..	..	..	..	..	..	..	..	..	..	..	..	6	1½	1	1	1	3
	Spina Bifida	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	½	..	1	1	..
	Other Malformations	3	..	..	..	..	..	..	..	..	..	..	..	..	..	3	¾	2	..	..	1
	Teething	62	..	..	..	..	..	..	..	..	..	..	..	..	..	62	15½	16	12	17	17
	Total Order 1	138	..	..	..	..	..	..	..	..	..	..	..	..	..	138	34½	43	22	29	44
	Order 2.—*Developmental Diseases of Adults.*																				
	Paramenia	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	¼	..	1	..	..
	Childbirth	..	..	..	7	17	31	9	..	..	..	..	..	..	..	64	16	12	14	15	23
	Prolapsus Uteri	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	¼	..	..	..	1
	Total Order 2	..	..	..	7	17	31	9	..	2	..	..	..	..	..	66	16½	12	15	15	24
	Order 3.—*Developmental Diseases of Old People.*																				
	Old Age	..	..	..	..	..	..	..	7	98	216	163	15	1	2	502	125½	106	110	151	135
	Order 4.—*Diseases of Nutrition.*																				
	Atrophy and Debility	162	3	3	..	1	1	5	13	1	..	..	..	..	..	189	47¼	44	40	55	50
	Total Class IV	300	3	3	7	18	32	14	20	101	216	163	15	1	2	895	223¾	205	187	250	253

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CLASS V.—MORBI THANATICI,
Violent Diseases or Deaths.
Diseases which are the evident and direct results of physical or chemical forces, acting either by the will of the sufferer or other persons, or accidentally.

	4	8	14	8	18	15	19	27	13	12	2	..	..	3	188	341	29	35	38	36
ORDER 1.—*Accident or Negligence.*																				
Fractures, Contusions, &c.	4	8	14	8	18	15	19	27	13	12	2	..	..	3	188	341	29	35	38	36
Wounds { Gunshot	..	3	..	2	..	..	..	1	..	..	..	..	..	..	6	11	2	1	2	1
Wounds { Cuts, &c.	2	..	3	..	..	1	1	1	1	..	..	..	..	..	9	2½	3	2	3	1
Burns and Scalds	45	9	5	1	2	1	3	3	3	5	1	..	..	1	79	19½	17	12	18	33
Poison	..	..	1	1	..	1	..	..	..	..	..	..	..	..	3	½	1	2	..	..
Bite of a Snake or Insect	..	2	1	..	..	..	..	..	..	..	..	..	..	..	3	½	1	1	1	..
Drowning	25	8	14	8	12	8	12	11	7	4	2	..	..	4	115	28½	41	21	24	29
Suffocation	6	..	1	1	..	1	3	2	1	1	..	..	..	..	16	4	6	..	6	4
Other or unspecified Accidents	1	..	..	1	1	1	2	2	5	..	..	..	..	..	14	3½	11	..	..	8
Total Order 1	83	31	30	22	28	28	40	47	30	22	5	..	..	8	388	96½	111	74	92	106
ORDER 3.—*Homicide.*																				
Murder and Manslaughter	1	..	..	1	1	..	4	1	1	2	..	..	..	1	12	3	2	2	5	3
ORDER 4.—*Suicide.*																				
Wounds { Gunshot	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	¼	..	..	..	1
Wounds { Cut, Stab, &c.	..	..	..	..	1	..	2	1	2	1	..	..	..	..	7	1½	1	2	3	1
Drowning	..	..	..	1	..	1	..	2	2	1	..	..	..	..	7	1½	3	2	1	1
Hanging	..	..	1	..	..	2	2	..	1	1	1	..	..	..	8	2	3	3	1	1
Otherwise, or manner unspecified	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	¼	..	1	..	..
Total Order 4	..	..	1	1	1	3	4	3	6	4	1	..	..	..	24	6	7	8	5	4
TOTAL CLASS V.	84	31	40	24	30	31	48	51	37	28	6	..	..	9	419	104½	120	84	102	118
Specified Causes	1684	154	151	120	311	329	519	653	717	599	242	16	1	15	5461	..	1447	1302	1378	1334
Causes not specified	30	2	2	1	..	7	10	12	16	8	2	1	..	6	97	..	17	33	26	21
All Causes	1664	156	153	121	311	336	529	665	738	607	244	17	1	21	5558	1393½	1464	1385	1404	1355

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TABLE E.

DEATHS in the Hobarton Registration District in each Month for 15 *years,* 1857 *to* 1871 *inclusive.*

Year.	*January.*	*February.*	*March.*	*April.*	*May.*	*June.*	*July.*	*August.*	*September.*	*October.*	*November.*	*December.*	TOTAL.
1857	60	54	55	42	38	32	52	54	44	57	45	48	581
1858	74	70	66	47	43	47	41	74	42	57	38	45	644
1859	56	75	48	47	29	48	39	48	50	41	29	62	572
1860	72	67	53	45	39	36	114	40	65	45	51	38	665*
1861	45	42	51	48	50	59	59	48	35	29	39	46	551
1862	55	58	52	37	36	53	36	43	56	30	45	52	553
1863	45	69	53	48	35	48	48	41	42	49	30	39	547
1864	24	47	73	54	48	54	70	41	37	41	43	36	568
1865	41	53	56	38	43	32	36	42	44	40	37	30	492
1866	31	54	57	45	43	48	54	33	28	36	36	50	515
1867	56	34	54	43	46	48	68	35	35	42	48	42	551
1868	38	45	53	45	39	54	64	54	46	49	38	54	579
1869	41	40	42	27	38	35	47	42	22	49	40	39	462†
1870	64	48	47	34	39	46	40	49	38	34	25	36	500
1871	47	42	51	29	33	51	42	34	47	40	45	46	507
Sums	749	798	811	629	599	691	810	678	631	639	589	663	8287
Mean of 15 years	$49\frac{14}{15}$	$53\frac{3}{15}$	$54\frac{1}{15}$	$41\frac{14}{15}$	$39\frac{14}{15}$	$46\frac{1}{15}$	54	$45\frac{3}{15}$	$42\frac{1}{15}$	$42\frac{9}{15}$	$39\frac{4}{15}$	$44\frac{3}{15}$	$552\frac{7}{15}$

1858. In the first four months of 1858 an epidemic of diarrhœa prevailed. A paper upon it was contributed by me to the *Australian Medical Journal.* August was the wettest month on record, with great floods. Atmospheric pressure was great, the winds high, and temperature very variable. Deaths of children from diseases of the brain and organs of respiration were unusually numerous in that month.

1860. In July, August, September, and October of 1860 an influenza epidemic prevailed in this as well as all the other Australian Colonies. My account of it will be found in the *Australian Medical Journal.*

1861. In this year measles prevailed throughout Tasmania, and added 55 deaths to the total for the Hobarton Registration District.

1864. See my Report for March of this year to the Royal Society of Tasmania. Bowel complaints were unusually prevalent, and scarlatina, which continued in April. The excessive number of deaths in July was caused by diseases of the respiratory organs owing to high southerly winds saturated with ozone, but there was not one zymotic death.

1867. Measles and its sequelæ added to the death-rate of July as it did to the July of 1861. These were the only two epidemics of the disease in the 15 years tabled.

1868. Whooping-cough and its sequelæ augmented the death-rate of June, July, August, September, and October of 1868.

1869, 1870, 1871. No epidemic disease prevailed in the Hobarton Registration District during the last three years in this table.

N.B. The deaths recorded in the above table are those which actually occurred within the months named, irrespective of the time at which they were registered, so that the weather on any day of any month can be weighed as to its influence on the deaths of that day or that month precisely, as has been done in my monthly Reports to the Royal Society of Tasmania for many years past.

* Maximum. † Minimum.

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TABLE F.

DEATHS in the Hobarton Registration District during the Year 1870, irrespective of the date of Registration.

Classes.	Orders, Diseases, &c.	Under 5 Years.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	January.	February.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total of all Ages.
Class 1.—Morbi Zymotici. Diseases that are either epidemic, endemic, or communicable; induced by some specific body, or by the want or by the bad quality of the food.	**Order 1.—*Miasmatic Diseases.***																									
	Diphtheria	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	2
	Quinsy	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
	Croup	4	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	2	2	..	..	..	6
	Typhoid Fever	..	..	..	4	1	..	..	..	..	..	..	..	..	1	1	1	1	..	..	..	1	..	..	..	..	5
	Erysipelas	..	..	1	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	2
	Pyœmia	..	..	..	..	1	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	2
	Dysentery	..	..	..	..	..	1	1	1	2	..	..	1	..	2	..	1	..	1	1	..	1	..	..	..	..	6
	Diarrhœa	19	..	..	..	..	..	1	..	1	1	..	..	..	6	6	2	1	..	1	..	..	..	..	2	4	22
	Cholera	2	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	2
	Fever simple	..	..	..	..	3	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	1	3
	Rheumatism	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
	Total Order 1	27	3	2	4	5	1	3	1	3	2	..	1	..	13	9	6	2	2	4	..	5	3	1	2	5	52
	Order 2.—*Enthetic Diseases.*																									
	Syphilis, Congenital	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	2
	Order 3.—*Dietic Diseases.*																									
	Want of Breast-milk	2	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2
	Purpura and Scurvy	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	2
	Total Order 3	3	..	..	1	..	..	..	..	..	..	..	..	..	3	..	..	..	..	1	..	..	..	..	..	..	4
	Order 4.—*Parasitic Diseases.*																									
	Thrush	3	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	3
	Total Class I.	35	3	2	5	5	1	3	1	3	2	..	1	..	18	10	7	2	2	6	..	5	3	1	2	5	61
Class II.—Morbi Cachexiæ. *Constitutional Diseases.* Sporadic diseases, affecting several organs in which new morbid products are often deposited. Sometimes hereditary.	**Order 1.—*Diathetic Diseases.***																									
	Dropsy	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	1	1	..	..	..	..	..	..	..	..	3
	Cancer	..	..	..	..	..	1	4	10	6	2	2	..	..	4	2	2	3	2	1	5	1	2	..	2	1	25
	Total Order 1	..	..	..	..	..	1	4	11	7	3	2	..	..	5	2	3	4	2	1	5	1	2	..	2	1	28
	Order 2.—*Tubercular Diseases.*																									
	Scrofula	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	3
	Tabes Mesenterica	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	2
	Phthisis	1	2	1	5	12	5	7	9	1	..	..	..	..	2	4	6	4	2	5	5	5	3	3	2	2	43
	Hydrocephalus	7	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	1	..	..	..	..	..	..	1	2	7
	Total Order 2	9	2	3	6	13	5	7	9	1	..	..	..	..	2	7	7	5	3	6	5	5	3	3	5	4	55
	Total Class II	9	2	3	6	13	6	11	20	8	3	2	..	..	7	9	10	9	5	7	10	6	5	3	7	5	83
	Order 1.—*Diseases of the Nervous System.*																									
	Cephalitis, Meningitis, &c.	3	..	..	1	..	1	..	..	..	..	..	..	..	..	1	..	1	..	..	1	2	..	..	..	..	5
	Apoplexy and Congestion of the Brain	4	..	..	..	..	..	2	2	4	5	1	..	..	2	1	2	2	1	3	3	1	1	2	..	..	18
	Paralysis	..	..	..	..	..	1	2	2	4	9	2	..	..	2	2	3	..	3	2	1	1	2	2	2	..	20
	Insanity	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
	Epilepsy	..	..	..	..	1	..	1	..	1	1	..	..	..	..	..	1	..	..	1	..	2	..	..	..	..	4
	Convulsions	28	..	..	..	..	..	..	..	..	..	..	..	..	3	4	3	5	3	2	..	3	1	2	1	1	28
	Brain Disease, &c.	1	..	..	..	1	1	1	1	..	1	..	1	..	1	..	..	..	2	..	1	1	..	..	..	2	7
	Total Order 1	36	..	..	1	2	4	6	5	9	16	3	1	..	8	8	9	8	9	8	6	10	4	7	3	3	83

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DEATHS—*continued.*

Classes.	Orders, Diseases, &c.	Under 5 Years.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	January.	February.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total of all Ages.
Class III.—Morbi Monorganici. Local Diseases. Sporadic diseases in which the functions of particular organs or systems are disturbed or obliterated, with or without inflammation; sometimes hereditary.	**Order 2.—*Diseases of the Organs of Circulation.***																									
	Pericarditis and Endocarditis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	.	1
	Aneurism	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	2
	Hæmorrhage from varicose veins	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
	Heart Disease, &c.	..	1	1	..	..	3	9	5	9	8	1	..	..	5	3	3	2	4	6	4	1	4	1	1	3	37
	Total Order 2	1	1	1	..	..	3	9	6	9	9	2	..	..	5	3	4	2	4	6	5	3	4	1	1	3	41
	Order 3.—*Diseases of the Respiratory System.*																									
	Catarrh	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2
	Laryngitis	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
	Bronchitis	6	..	..	..	..	..	2	5	4	7	2	..	..	4	4	..	1	2	2	1	5	1	2	1	3	26
	Pleurisy	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	.	1	..	..	..	1
	Pneumonia	4	..	..	..	1	2	1	1	3	2	..	..	..	1	1	1	..	1	2	2	..	1	2	1	2	14
	Congestion of Lungs, Pulmonary Apoplexy	4	..	..	..	..	1	1	..	2	1	..	..	..	..	..	..	1	1	1	..	..	1	2	2	1	9
	Asthma	..	..	..	..	..	..	..	2	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	2
	Lung Disease, &c.	..	..	..	..	..	1	1	3	..	..	..	..	..	1	..	..	1	1	..	1	1	..	..	..	..	5
	Hydrothorax	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	2
	Total Order 3	14	..	..	..	1	5	5	12	10	13	2	..	..	8	5	1	3	6	5	5	6	5	6	4	8	62
	Order 4.—*Diseases of the Digestive Organs.*																									
	Peritonitis	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
	Ascites	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
	Ulceration of Intestines	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
	Intussusception	1	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	.	..	..	1	..	..	..	..	..	1
	Stricture of Intestines	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
	Stomach Disease, &c.	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
	Jaundice, Gallstone, &c.	4	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	1	..	..	..	4
	Liver Disease, &c.	..	..	..	..	2	2	3	7	3	1	..	..	..	2	3	3	2	1	..	2	2	1	..	1	1	18
	Total Order 4	5	..	..	..	2	2	5	9	4	1	..	..	..	5	3	5	4	2	..	3	2	2	..	1	1	28
	Order 5.—*Diseases of the Urinary Organs.*																									
	Nephritis	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
	Ischuria	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
	Nephria	..	..	..	..	1	..	..	..	1	1	..	..	..	..	..	..	..	..	2	..	..	..	1	..	..	3
	Diabetes	1	..	..	..	..	..	1	..	1	1	..	..	..	1	..	..	..	..	..	..	..	2	1	..	..	4
	Cystitis	..	..	..	..	..	..	..	1	..	2	..	..	..	..	1	..	..	..	..	1	..	..	1	..	..	3
	Kidney Disease, &c.	..	..	..	1	..	3	2	2	2	2	..	..	..	1	1	1	1	..	1	2	1	1	..	1	2	12
	Total Order 5	1	..	..	1	2	3	3	4	4	6	..	..	..	3	2	1	1	..	3	3	2	3	3	1	2	24
	Order 7.—*Diseases of the Locomotive System.*																									
	Diseases of the spine	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
	Rickets	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
	Total Order 7	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	2
	Order 8.—*Diseases of the Integumentary System.*																									
	Phlegmon, Abscess, &c.	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	3
	Total Class III	57	1	2	2	7	17	28	38	38	45	7	1	..	29	21	21	18	21	22	22	24	19	17	11	18	243

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Class IV.—Morbi Metamorphici. *Developmental Diseases.* Special Diseases, the incidental result of the formative, reproductive, and nutritive processes.																										
Order 1.—*Developmental Diseases of Children.*																										
Premature Birth	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Other Malformations, congenital obstruction of the bowels	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Teething	2	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	2
Hœmorrhage from the nose	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
Total Order 1	5	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	1	..	1	..	..	5
Order 2.—*Developmental Diseases of Adults.*																										
Childbirth	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Uterus ruptured	..	..	..	..	1	1	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	2
Puerperal convulsions	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	2
Others	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	1	..	..	3
Total Order 2	..	..	..	1	1	4	1	..	..	1	..	..	..	1	..	1	1	1	1	2	..	1	..	..	8
Order 3.—*Developmental Diseases of Old People.*																										
Old Age	..	..	..	..	..	..	..	..	5	26	18	1	..	5	5	2	3	4	5	5	5	4	6	1	5	50
Order 4.—*Diseases of Nutrition.*																										
Atrophy and Debility	14	..	1	..	..	..	..	3	5	..	..	..	..	2	1	..	1	3	1	..	5	3	4	3	..	23
Total Class IV	19	..	1	1	1	4	1	3	10	27	18	1	..	9	6	5	5	8	7	7	11	8	11	4	5	86
Class V.—Morbi Thanatici. *Violent Diseases or Deaths.* Diseases which are the evident and direct results of physical or chemical forces, acting either by the will of the sufferer or other persons, or accidentally.																										
Order 1.—*Accident or Negligence.*																										
Fractures, Contusions, &c.	..	..	..	..	2	..	1	2	2	1	..	..	..	1	1	1	..	..	2	..	1	..	1	..	1	8
Ditto, Tetanus supervening	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Wounds, Cuts, &c., Tetanus supervening	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Burns and Scalds	2	1	1	..	..	..	..	..	..	2	..	..	..	..	1	1	..	..	2	..	..	..	1	..	1	6
Ditto, Tetanus supervening	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Drowning	1	..	1	..	..	..	..	1	1	1	..	..	..	..	..	1	..	2	..	..	1	..	..	..	1	5
Other or unspecified Accidents	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Total Order 1	3	1	3	..	2	1	2	4	3	4	..	..	..	1	2	3	..	3	4	1	3	1	2	..	3	23
Order 4.—*Suicide.*																										
Wounds, Cut, Stab, &c.	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	2
Total Class V.	3	1	3	..	3	1	2	4	3	5	..	..	..	1	2	3	..	3	4	1	3	2	2	1	3	25
Causes not specified	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	.	2
All Causes	123	7	11	14	29	29	46	66	63	82	27	3	..	64	48	47	34	39	46	40	49	38	34	25	36	500

JAMES BARNARD,
GOVERNMENT PRINTER, TASMANIA.

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